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CONTENTS

Original Communications PAGE

Progressive Asymmetry of the Mandible. By W. B. BALDERSTON, L.R.C.P., L.R.C.S.Ed., L.R.F.P.&S., L.D.S.Glasg. 25

A High-Speed Section Cutting Machine. By H. F. ATKINSON, *M.B.E.*, M.Sc., L.D.S. 29

Three Appliances to Aid the Arrest of Dental Hæmorrhage. By Lieut. P. FELIX, F.D.S. R.C.S.Eng., B.D.S.Durh., R.A.D.C. 32

Full Dentures : A New and Simple Technique. By ALEXANDER MACGREGOR, M.A., M.D., B.Chir. Cantab., F.D.S., M.R.C.S.Eng. 36

Public Dental Service in Great Britain with Reference to the New Zealand Scheme. By G. E. M. HALLETT, F.D.S. R.C.S.Eng., H.D.D.Edin., L.D.S.Liv. 38

Short Communications

Sarcoma of the Mandible ? A Case for Diagnosis. By E. K. TRATMAN, *O.B.E.*, M.D.S., F.D.S. R.C.S. Eng., F.S.A. 41

A Case of Acute Monocytic Leukæmia. By ADRIAN COWAN, B.A., M.B., B.Ch., B.Dent.Sc.Dublin .. 42

Demonstration at the Annual Meeting

Precision Preparation for Jacket Crowns. By W. ROLAND CLEVERLEY, L.D.S.Bham. 44

Continued overleaf

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CONTENTS—*continued*

Orthodontic Notes PAGE
The Intermaxillary Space—Normal and Abnormal .. 45
Simplicity in Orthodontic Mechanism .. 45

Editorial
The Journal .. 46

Notes and Comments PAGE
New Year Honours .. 47
Dental Officer's Reports .. 47
Thirty Years Ago .. 47
" Health and the Family " .. 48
Expenditure on Dental Treatment in U.S.A. .. 48

Fifty Years Ago .. 48

Letters to the Editor
The Benevolent Fund (George G. Ellis) .. 48
" " " (R. G. Heegaard Warner) 48
Sucking Habits (J. H. Badcock) .. 49
The Amalgam Restoration (Michael Frost) 49
The Work of the School Service (K. Fletcher) 49

Reviews and Abstracts .. 50

The Health Service .. 52

Dental News .. 53

The Schools .. 54

The Services .. 54

Obituary
Ernest Rogers Bull .. 54

Our Diary .. 54

British Dental Journal .. 54

Supplement

Association Notices .. 9

Correspondence .. 10

New Members .. 10

Forthcoming Meetings at Headquarters .. 10

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BRITISH DENTAL JOURNAL

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PROGRESSIVE ASYMMETRY OF THE MANDIBLE

By W. B. BALDERSTON, L.R.C.P., L.R.C.S.Ed., L.R.F.P.&S., L.D.S.Glas.

Dental Department, University College Hospital

Since Rushton published his three cases of condylar hyperplasia and reviewed the literature on the subject there have been several further cases recorded, but the condition of progressive asymmetry of the mandible still appears to be rare enough and incompletely enough understood to warrant this report.

Case Report

The patient was a well-developed, intelligent male of 27 2/12, who sought advice because of increasing difficulty in chewing his food.

A facial deformity had first been noticed by his parents when he was 13 years of age, and this had gradually increased ever since, the patient stating that about three months before seeking advice he had noticed that his front teeth, which previously met edge to edge, were now in a position of inferior protrusion.

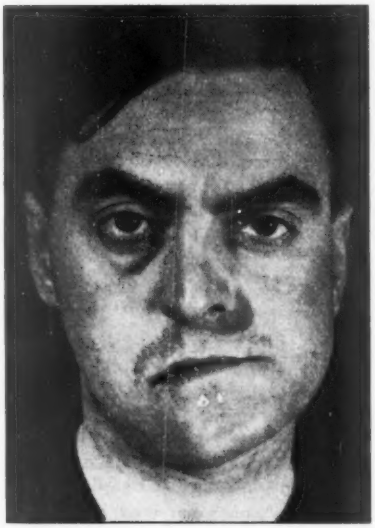

Fig. 1.—The patient at age 27 2/12.

On examination, there was obviously a gross deformity of the lower part of the face, the chin being protruded and about 3 cm. to the left of the mid-line, and it seemed certain that this deformity was due to an increase in size of the posterior part of the right half of the mandible, rather than a diminution in size of the left (fig. 1). The lower border of the right mandible was at a lower level than the left, and the vertical height of the body was about 0·5 cm. greater than on the left side. The length of the body, measured from the anterior border of the ascending ramus to the mid-line of $\overline{1}|\overline{1}$, was 5·7 cm. on the right and 6·3 cm. on the left. Palpation revealed no angle on the right side, but a normally developed one on the left, the right mandible appearing to extend in a continuous unbroken curve from below the ear to the chin. Movements of the mandible were full, free and painless in every direction and the occlusion—though grossly abnormal—was adequate. The mid-line of the lower central incisors was in line with the mid-line of the uppers and about 4 mm. in front, $\overline{4321}|\overline{1234}$ being outside the upper teeth.

$|\overline{5678}$ were in adequate occlusion with the upper teeth, although they were tilted far lingually; $|\underline{67}$ were tilted labially, so that $|\underline{7}$ was 0·8 cm. farther from the mid-line than $\underline{7}|$; $\overline{5}|$ occluded with $\underline{7}|$. Teeth missing from the arches were $\frac{86\ \ |4}{8\ 5|}$, but there was no gap between $\underline{75}|$ or $|\underline{35}$. $\overline{6}|$ was tilted mesially and $\overline{4}|$, though erupted, was impacted between $\overline{63}|$.

The teeth on the right were the same size as those on the left, and their crowns were of similar height.

The plane of the upper teeth was tilted so that the teeth on the right were at a lower level than those on the left, and measurements from the infra-orbital margin showed $\underline{4}|$ to be 1·1 cm. lower than $|\underline{5}$. There was no noticeable deformity or increase in size of

the bodies of the maxillæ, of the malar bones or of the zygomatic arches. The tongue was of normal size and showed no deviation when protruded.

Past History.—Chicken-pox, whooping-cough and measles were admitted, but no history could be obtained of the patient having had mumps or any other childish ailment.

At 15 or 16, he had what appears to have been an otitis media of the right ear.

Questioned about any injury to his jaw, he said that when he was 11 or 12 he was very keen on boxing and does remember being hit on the jaw. He was told that he had received some injury, but cannot recall having had any special treatment for it.

FIG. 2.—Antero-posterior radiograph.

FIG. 3.—Right condylar process.

There was no relevant family history.

X-ray Examination.—X-ray examination showed an immense enlargement of the right condylar process (figs. 2 and 3). The glenoid fossa showed very little deformity and the condyle moved forward on to the articular eminence when the mouth was opened. There was marked diminution of the joint space, particularly anteriorly.

A radiograph of the right body and ascending ramus (fig. 4) confirmed the clinical impression that

FIG. 4.—Right mandible.

there was no angle present, and also suggested that the increase in depth was due to alveolar growth. $\overline{85}|$ were impacted and $\underline{8}|$ unerupted, and the distal root of $\overline{7}|$ was absorbed almost to the pulp canal by pressure from $\overline{\underline{8}}|$.

The ascending rami were apparently equal in width. The antra were of equal size and their floors on the same level.

OPERATION BY MR. D. N. MATTHEWS

It was decided first to remove the right condylar process at its base, and to see how far the deformity could then be corrected. If further correction proved necessary, a Kostecka section of the left ascending ramus at a later date was contemplated.

To accomplish the removal of the greatly enlarged right condylar process, Mr. Matthews decided to section it first by means of a Gigli saw through stab incisions, and then to remove the condyle from above. The proposed plane of section was mapped out on the skin with lead markers, radiographs being taken to check their position. The section was performed quite easily and the condyle and neck were removed through a vertical incision in front of the ear.

The cosmetic deformity was much reduced, and the jaw fixed by cap splints in its optimum position ($\overline{7}|$ had previously been extracted) so that the lower front teeth were behind the uppers except for $\overline{3}|$, and the mid-line of the uppers was above the centre

of $\overline{2}$, i.e. a backward movement of about 4 mm. and a movement to the right of about 9 mm.

The dental occlusion was not improved by this manœuvre, but $\underline{|}67$ were later brought into occlusion by a Schwarz plate, and the patient can now eat any kind of food without difficulty.

The cosmetic result is shown in fig. 5 and the excised condyle and neck in figs. 6 and 7, and it will be noticed from these that its shape is not much distorted and the surface is smooth and regular.

Microscopic examination of the excised condyle showed the articular cartilage to be very thin and atrophic, with no underlying hyaline cartilage and with a continuous layer of adult bone immediately beneath it.

The pathological report was as follows :—

" Both grossly and minutely, the histological appearances are normal. The bone is adult, well formed, lamellated bone and the cortex and trabeculæ appear normal. The medullary cavity contains much norma fatty marrow and a small amount of hæmopoietic marrow. The articular cartilage is thin and atrophic, but is otherwise normal. Microscopically, the appearances are therefore purely an increase of quantity rather than any change in quality."

FIG. 5.—Post-operative appearance.

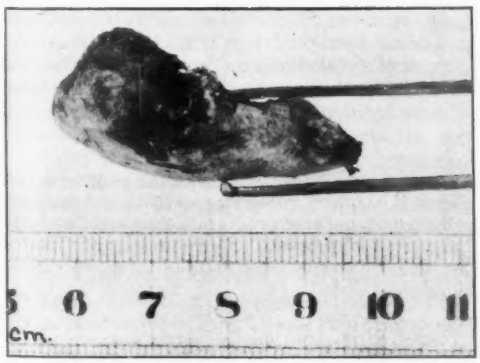

FIG. 6.—Lateral aspect of excised right condyloid process.

FIG. 7.—Posterior aspect of condyle. The rough area at the top of the figure was caused by bone forceps during removal.

The progress of the condition in this case can be followed in figs. 8 to 11. It is not noticeable in an earlier photograph taken at 9 years, but can be seen to have been present at 10. It shows gradual progress till 17 and a marked increase before the next available photograph at 26, when the condition

FIG. 8.—Age 10 ; an alteration in the line of the lower lip seems to indicate the start of the overgrowth.

FIG. 9.—Age 13 ; a considerable deformity noticeable.

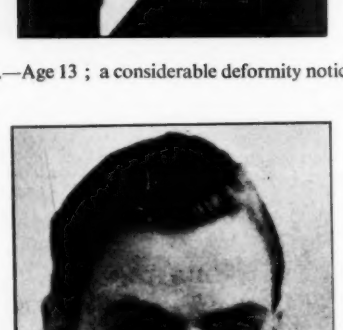

FIG. 10.—Age 16.

was substantially as seen in fig. 1. Since there is no microscopic evidence of active growth in the excised condyle, the condition seems to have been arrested between 27 and the time of operation ($27\frac{1}{2}$) —taking as correct the patient's statement about the change that took place in his bite at 27. It is of course possible that this change was a bite of convenience and that the arrest took place somewhat earlier.

The photographs also show that neither the blow at 11 nor the otitis media at 15 was responsible for the start of the condition.

The amount of increase in height of the alveolar

FIG. 11.—Age 17.

bone of the right mandible and maxilla is remarkable, and this growth is probably compensatory in nature. Assuming that the alveolar growth on the left side was not restricted, the total increase of the alveolar height on the affected side (upper and lower) was about one centimetre and a half.

SUMMARY

A case of progressive asymmetry of the mandible is reported, in which the progress of the condition can be followed from the age of 10 till operation at $27\frac{1}{2}$.

Although trauma and otitis media are known to have occurred, it is shown that neither was responsible for the start of the condition. The overgrowth causing the asymmetry seems to have been confined to the condylar process, but there is no histological evidence to suggest how the overgrowth was produced.

An interesting feature of the case is the adaptation to altered functional requirements shown by the increase of alveolar bone on the affected side, keeping the teeth in occlusion in spite of the constant tendency of the condition to produce an open bite on that side.

ACKNOWLEDGMENTS

I wish to thank Mr. Matthews for performing the operation, Mr. W. Grossman for his advice and treatment of the orthodontic aspect of the case, Professor Cameron's Department for preparing and reporting on the section, and the Photographic Department of University College Hospital.

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A HIGH SPEED SECTION CUTTING MACHINE

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In previous communications [1] details were given of section-cutting machines for use on calcified material. Research into the problem of preparing and cutting sections of enamel and dentine has been in progress for a number of years and has now been developed so that it is possible to cut serial sections of both hard and soft tissues down to 25μ without previous decalcification. The one disadvantage of the method is that the resulting sections are thick when compared with cut decalcified ones, but it is possible to overcome this drawback by finishing individual sections by hand. The main advantages of the method are that the soft and hard tissues are preserved in their normal relationship and that the enamel is not lost as in the usual methods. The technique is ideally suitable for any histological investigation but particularly to a study of the relationship of the enamel to the soft tissues, both during and after eruption.

It is not proposed to describe in detail the technical procedures involved in the construction of the apparatus but to comment upon its essential points. The present machine is the outcome of over twelve years of experimental work and has been changed in form several times although the basic design has remained the same. The actual cutting of the specimen is done by means of a thin carborundum wheel mounted on a rapidly revolving spindle. The specimen is fed up to the wheel by means of a compound slide similar to the slide rest of a tool room lathe. One of the earlier machines was made from a small precision lathe, but, owing to rust and corrosion of the moving parts, play developed with consequent loss of accuracy and the machine was discarded. Water is used as the cutting lubricant and if the machine is to maintain a high standard of accuracy all parts must be made of corrosion resisting materials. The shaft carrying the cutting wheel runs in plain bearings fitted with adequate lubricators and provision is made for taking up any lateral play. The flanged washers securing the wheel are finished on the machine and must run dead true. The direction of rotation is towards the operator and is obtained by means of an endless belt, any join in the driving belt causes vibration of the machine and excessive noise.

The movement of the specimen is obtained by means of two slides mounted at right-angles to each other and actuated by means of fine thread screws. The construction of the slides follows standard practice but the present ones were built up from brass bar and have proved very successful. There must be no play in the slides and no backlash in the screws. The slides are mounted so that the feed in one is exactly at right-angles to the wheel spindle. A dial test indicator reading to ·001 in. is fixed to the cross slide to indicate the thickness of the specimen to be cut. The mounting and clamping of the specimen is the same as described in previous papers. The recommended cutting speed of the wheel is over 12,000 surface feet per minute and is obtained by using a $\frac{1}{4}$ H.P. motor running at 2,800 revs. per minute fitted with an 8 in. diameter pulley driving a 2 in. pulley on the machine spindle (figs. 1 and 2).

The wheel is totally enclosed in a perspex guard which is cut away just enough to allow the specimen

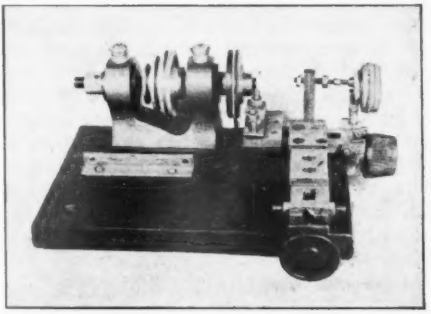


FIG. 1.—General view of the machine with guard removed.

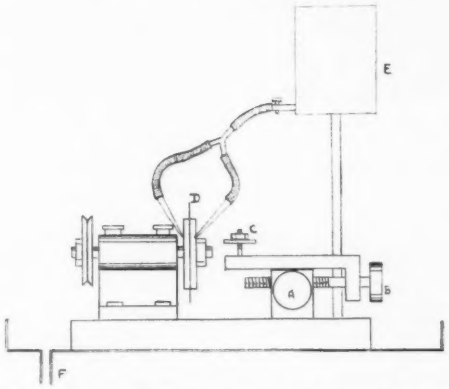


FIG. 2.—Diagram showing the arrangement of the various parts of the machine.

A, Feed in screw. B, Screw controlling thickness of the section. C, Specimen clamp. D, Wheel. E, Water tank. F, Tray piped to waste.

to be presented to the wheel. The front of the guard is brought forward in the form of a trough and collects the sections as they are cut. A movable bar of perspex across the end of the trough ensures that a sufficient amount of water remains below the wheel to prevent the specimens from breaking when they fall after cutting. The pulley belt and spindle are enclosed in a metal guard to prevent accidents. Water is supplied to the specimen and wheel by two glass tubes connected to a one gallon tank, the rate of flow being approximately three gallons per hour. The whole machine stands in a shallow metal tray which is piped to waste.

Cutting the Sections

A wheel is mounted between the washers and trued by means of a dressing stick mounted in the specimen holder as before. The feed-in screw and the cross slide screw are adjusted so that the specimen holder is in the out position. The specimen, mounted in sealing wax, is clamped in the holder and advanced to the wheel by means of the feed-in screw, the exact position of the commencing cut is obtained by adjustment of the cross slide screw. On no account must the cross slide screw be touched once a cut has started or fracture of the wheel will result. The dial gauge is set to zero and the first cut made. The specimen is returned to the starting position with the motor running and moved laterally the thickness of the wheel plus the thickness of the desired specimen. Although the wheels are made to a definite thickness it is essential to measure each one with a micrometer before mounting and to use this figure when determining the amount that the specimen is to be advanced. When a wheel has been in use for some little time the loss in cutting is less than one thousandth of an inch and thus more and thinner sections can be produced. When using a wheel exactly ·005 in. thick the specimen is advanced after each cut ·007 in. to produce a section ·001 in. or 25μ thick.

To section a specimen consisting of both hard and soft tissues it is essential to embed in Canada balsam. Various other embedding agents have been tried but none has proved so successful. The technique of embedding is as follows and is essentially similar to that described by Weil. In order to secure rapid fixation and subsequent penetration of the Canada balsam the maximum amount of the soft tissue is exposed to the reagents by suitably cutting the specimen. For longitudinal sections the tooth and attachments are cut on the machine through the crown, root and pulp along the long axis of the tooth. For transverse sections the tooth is cut into two or three pieces at right angles to the long axis of the tooth. Fixation may be effected by means of formalin or corrosive sublimate, and the whole stained as in the original method. The specimens are taken through the alcohols to xylol and then to a dilute solution of balsam in either xylol or chloroform which is allowed to evaporate slowly at room temperature until a thick syrup is formed. The best results have been obtained by commencing with a large volume of dilute balsam which is allowed to evaporate naturally rather than by hastening the concentration by heat or the too rapid addition of solid balsam. The above process must be carried out in a dust-free atmosphere and is best performed under a bell jar standing on a a glass-wool mat. The specimens are transferred to individual boxes made from lead foil and covered with the thick balsam solution. As the evaporation proceeds powdered balsam is added to the boxes to keep the volume constant. When the mass is almost solid the boxes are transferred to an oven at 38° C. and further balsam added. When no further reduction in volume takes place the boxes are removed and the balsam allowed to harden at room temperature. The resulting block is trimmed and sectioned in the usual way. It is essential that the balsam is quite hard throughout the entire specimen and this requires about seven days at room temperature after the lead foil has been stripped off. Cutting must be done under cold water, and in warm weather ice cubes in the water tank are an advantage. Cross sections of the tooth containing pulp can be passed through xylol and alcohol and stained without fear of spoiling the relationship between the various elements. When dealing with sections which have external soft tissue attachments staining in bulk before sectioning is to be preferred.

When investigating carious lesions of the dentine and enamel it is advisable to embed in Canada balsam before sectioning in order to preserve the overhanging cavity edges and other fragile structures. It is generally unnecessary to embed in a block as a coating of balsam is sufficient to prevent loss of the unsupported structures. When cutting on a carious lesion of enamel a coating of balsam is sufficient to maintain the partially dissolved prisms in position. The method is as follows : fix and wash, dehydrate in alcohol and xylol and dip the specimen in thick Canada balsam, allow to dry and redip. Repeat until a sufficient coat has been built up and allow to harden at room temperature. Section in the usual way.

The photographs (figs. 3, 4, 5 and 6) give an illustration of the uses to which the method may be put. They were all taken from cut sections which did not receive any grinding or polishing after cutting.

The technique for calcified material is extremely simple while that employed for hard and soft tissues is no more difficult than the normal paraffin embedding. The machine has been used for producing thin sections of enamel for permeability

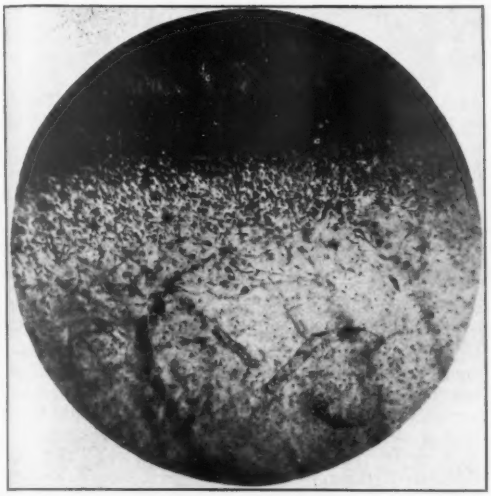


FIG. 3.—Section of pulp (× 100) prepared as in text showing dentine, odontoblasts, blood vessels, etc.

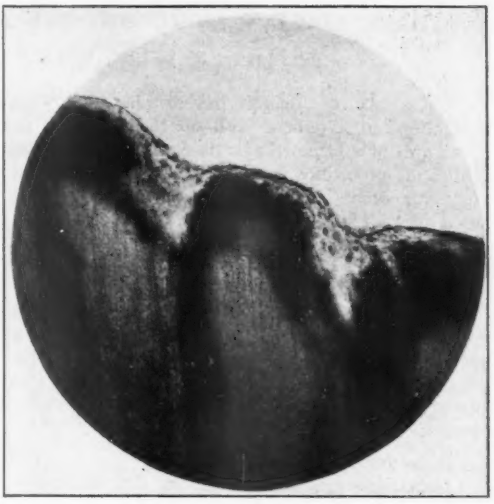


FIG. 5.—Section of enamel (× 400) from partially erupted upper third molar. A cellular layer is seen covering the surface and extending into the pits.

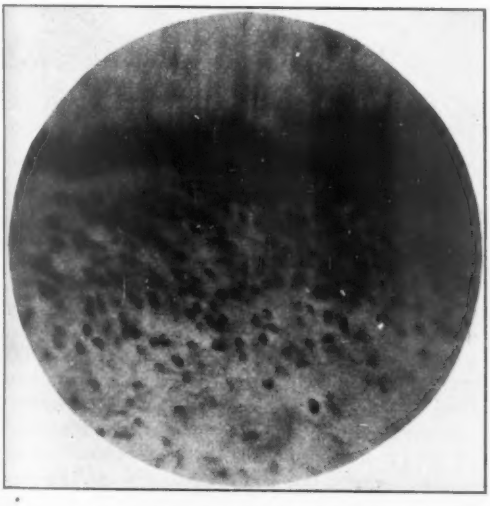


FIG. 4.—Photomicrograph of pulp (× 400) showing odontoblasts, etc.

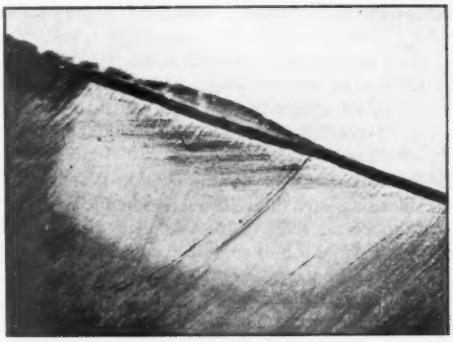


FIG. 6.—Section through buccal surface of lower molar (× 100) showing a plaque. The cross striations of the prisms in the area beneath the plaque are particularly well marked.

experiments employing radio-active isotopes and for investigating prism size, the function of the tufts and the distribution of lamellæ.

ACKNOWLEDGMENTS

My thanks are due to Professor E. Matthews in whose department the work was carried out and to Miss Lord for invaluable help with the development of the above methods and for the preparation of the specimens and photomicrographs.

[1] ATKINSON, H. F. (1948) *Brit. dent. J.*, **84**, 113, 260; (1949) *Ibid.*, **86**, 12; (1948) *Journal Sc. Instr.*, **25**, No. 9.

THREE APPLIANCES TO AID THE ARREST OF DENTAL HÆMORRHAGE

By Lieut. P. FELIX, F.D.S. R.C.S.Eng., B.D.S.Durh., R.A.D.C.

The arrest of dental hæmorrhage following extractions in a patient with no history, signs or symptoms of a hæmorrhagic diathesis, may often be a difficult procedure from the patient's and dental surgeon's points of view. The difficulties encountered are well known and too numerous to mention, but as the hæmorrhage is frequently of local origin, removal of the cause and adequate local measures will eventually prove effective.

The question of dealing with patients requiring extractions, who are true hæmophiliacs, or have a definite hæmorrhagic diathesis, is much more complex and requires considerable pre-operative care and preparation. Two aspects arise concerning prophylactic treatment :

(1) *Blood Investigations.*

Conclusions can be drawn from the results obtained as to the probable cause of the patient's condition, and prophylactic treatment, if indicated, can be instituted.

(2) *Local Measures to Arrest the Hæmorrhage.*

In deciding on the steps to be taken to control the hæmorrhage locally, we must consider three more factors :

(*a*) The application of pressure.
(*b*) Coagulant substances which are likely to be of the greatest value in the particular case.
(*c*) Steps taken to keep these coagulant substances in position.

The importance of the application of pressure to the bleeding area and the concomitant holding in position of any coagulant substance may easily be overlooked and too much reliance placed on the mere presence of the coagulant substances. MacFarlane [1], in discussing the use of hæmostatic applications in hæmophiliacs states :

> " In this connection it is important to remember that no coagulant, however quickly it will produce coagulation, can arrest an actual flow of blood. It is always necessary to stop the flow by temporary pressure for a sufficient length of time for the coagulant to produce a clot in the wound area down to the injured vessels, otherwise the coagulant is simply washed out of the wound to produce clots in a situation in which they are of no use. In many cases, even when a clot is formed in the wound area, it subsequently becomes loosened or dissolved. This is particularly troublesome in the case of infected tooth sockets and all that can be done is to repeat the application."

It appears, therefore, that the use of an appliance to exert pressure, and to maintain coagulant substances in position, might be of value in these particular cases. Obviously, conditions are different in every mouth and appliances of a different nature must be designed for each individual case, should their use be indicated. In the following case histories, three different types of splints which were used successfully are described :

Case 1

Patient D. M., male, aged 20. A known "bleeder" but not a true hæmophiliac.

History.—Many admissions to hospital for control of epistaxis, hæmaturia, etc. He had one tooth extracted, $\underline{6}|$, in 1944. Bled for one week following extraction and six pints of blood had to be given before hæmorrhage was finally arrested. No family history of any bleeding tendencies whatsoever. Last admission for control of hæmaturia in 1947 and the following investigations were made at the time :

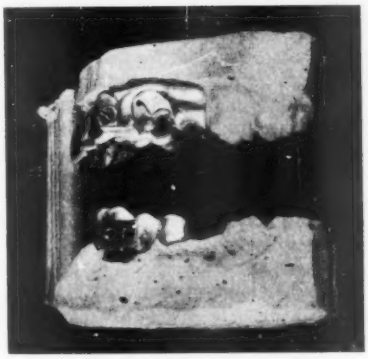
Hb. 90 per cent ; clotting time 4 min. 2 sec. ; bleeding time 3 min. 0 sec. ; Platelets 264,000 c.mm. Capillary fragility test negative ; plasma fibrinogen 442/100 cc. ; prothrombin time 14 sec. ; prothrombin concentration 88 per cent.

Readmitted 29.6.49 for burst hæmatoma of thumb following injury. Further investigations done as follows: Hb. 80 per cent ; clotting time 2 min. 35 sec. ; bleeding time, indefinite ; platelets 130,000 c.mm.

It is interesting to note the change in the bleeding time which had occurred since the last admission. Following the pin-prick of the ear lobe, the patient bled for twenty-four hours.

Dental Condition.—The patient complained of painful teeth at this time, $\frac{|6}{6|6}$ were found to be grossly carious and broken down. The crowns had been destroyed, the roots being level with the gum margin. There was no alternative to extraction as radiographs showed apical changes.

In view of the past history regarding dental extractions, it was decided to deal with one tooth at a time. A splint was designed for each jaw, which would maintain pressure on a pack, inserted into the socket and would also overlap the gum margin. The basis of the splint was an ordinary silver cap-splint, extending from $\overline{5}|$ to $|\overline{5}$ in the mandible and $\underline{3}|$ to $|\underline{5}$ in the maxilla, with fishplate attachments buccally, close to the teeth to be extracted. Separate small "pressure splints" were designed (fig. 1) in such a way that, when placed in position, they would maintain a pack in the socket and also cover and compress the gum margin. They were attached to the cap-splint by a curved bar, placed in the sulcus, with the fishplate attachment soldered to its end. In making the pressure splints, the tooth to be extracted and part of the gum were removed from the model as for an "immediate replacement" denture technique. Special care was taken to ensure that the gum margin was overlapped



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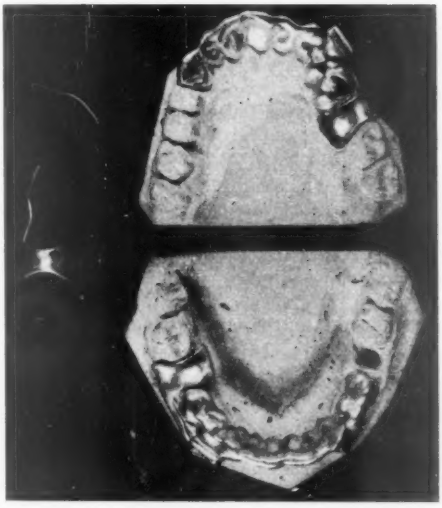

B

FIG. 1.—A, Side view of models, showing attachment and bar of pressure splint. B, Occlusal view of models with cap splints and pressure splints in position.

buccally and lingually. The mucoperiosteum of the lip of the socket is always displaced outwards on packing and a tight pack may also tear uninjured capillaries and thus cause hæmorrhage from a fresh site. This expansion of the lip of the socket was taken into consideration in the construction of the pressure splints. By placing the bar in the buccal sulcus, it was kept away from the gum margin, and, being slightly curved, slight alterations in position of the splint could be made, by bending the bar, should pressure on one particular point be desired. The splints were cemented and the patient taken to the theatre for the extraction of $\lceil\overline{6}$.

Operation.—In view of the raised clotting time and platelet deficiency, one pint of fresh blood was given pre-operatively. $\lceil\overline{6}$ was extracted and the socket carefully packed with "Oxycel" gauze soaked in human thrombin. A dry layer of "Oxycel" was applied over the socket bucco-lingually and, the splint was then put into position on top of the pack.

"Oxycel" gauze was used in this particular case as it forms a firm pack when impregnated with blood, and had proved very effective in arresting the hæmorrhage from the thumb, previously mentioned. The fact that it is completely adaptable and absorbable, well tolerated in the mouth and a good medium for fluid-coagulant substances, makes it a very strong and useful supporting matrix for the blood clot. Pressure applied on to such a pack is most effective, yet does not damage the underlying tissues.

Progress. — No post-operative hæmorrhage occurred and good clotting took place. Part of the clot extruded into the buccal sulcus along the bar but remained intact and separated on the sixth day without bleeding. The next day the pressure splint was removed revealing a healthy, healing socket.

In view of the lack of complications it was decided to remove $\lfloor\overline{6}$ under local anæsthesia. The same procedure was followed as before, except for the pre-operative transfusion. The extraction, however, proved to be more difficult than before, the roots having to be sectioned prior to removal and the gum margin was slightly traumatised buccally. No bleeding occurred from the socket, but oozing commenced from the torn gum forty-eight hours later. The pressure splint was removed, adjusted in such a way as to apply pressure to the buccal bleeding point and then replaced over an "Oxycel" pack. Further slight oozing occurred for three more days, necessitating an occasional change of the underlying pack. The splint was finally removed ten days after the extraction and the following day the remnants of the pack came away, leaving a clean and healing socket.

Further blood tests were done before the extraction of $\overline{6}\rfloor$ and these showed a further change in blood condition :

Hb. 78 per cent ; clotting time 4 min. 5 sec. ; bleeding time 6 min. 0 sec. ; platelets 320,000 c.mm.

After pre-operative transfusion of fresh blood the following values were obtained :

Clotting time 1 min. 47 sec. ; bleeding time 3 min. 0 sec. ; platelets 400,000 c.mm.

The extraction of $\overline{6}\rfloor$ proved uneventful ; and the same procedure as before was adopted. There were no post-operative complications and the socket was found to have healed well when the splint was removed five days after the extraction.

Comment

It was felt that, in this particular case, the construction of cap-splints and pressure splints was justified, especially in view of the past dental history of the patient. Many advantages of the splints became apparent during their use. They are easy to clean and remains self-cleansing—an important point in the post-operative mouth where oral hygiene is always poor. They are adaptable, easily removed and replaced. There is no need for external immobilisation of the mandible and the patient does not have to bite on something all the time. Food can be taken more easily and the patient's mouth is not encumbered by packs, composition moulds, etc. The disadvantages of the splints are the time taken for their construction and the need for cementing of the cap-splints, which makes their use difficult in cases where hæmorrhage has already commenced.

Case 2

Patient E. S., female, aged 54. A known "bleeder."

History.—Admission to hospital following dental extractions ten years ago for arrest of hæmorrhage. Inpatient for three weeks at the time. Also bruises extensively after slight trauma.

Dental Condition.—Patient had a badly neglected mouth, having been afraid to have her teeth attended to following her last experience.

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were in varying stages of decay and a clearance was indicated.

Investigations.—Hb. 106 per cent ; clotting time 1 min. 35 sec. ; bleeding time 8 min. 23 sec. ; platelets 400,000 c.mm. Capillary fragility normal ; Clot retraction normal. (Patient's bleeding time was later found to be constantly changing, similar to Case 1.)

The patient was admitted for the clearance and a splint was constructed to maintain pressure on packs inserted into the sockets. To apply pressure to both the edentulous jaws, two main courses of action were open ; a "Gunning splint" with external immobilisation of the mandible could be used or a sectional "Gunning" with separating springs and external immobilisation. It was decided to use the latter and the splint (fig. 2) was made as follows :

Starting with a clear acrylic, single unit Gunning, with four stout supporting struts of diameter of 10 mm. the struts were cut across, then drilled out to produce a hollow acrylic tube of 5 mm. diameter, into which 1 in. engineering compression springs were fitted. The length of the springs was adjusted so that the bite was open by 5 mm. when the springs were not acting. The springs were then cemented into the upper tube. On inserting the free ends of the springs into the lower tube and compressing them, articulation of the two separate splints could be obtained.

The patient was given a prophylactic course of vitamin P (Rutin) and blood was grouped and cross-matched, but no blood was given pre-operatively.

Operation.—The clearance was commenced in the maxilla and as each tooth was extracted, the socket was packed with "Oxycel" gauze. The hæmorrhage from the sockets was profuse but did not appear uncontrollable and the mandible was therefore cleared in a similar way. The lower splint and the alveolar portion of the upper splint were then lined

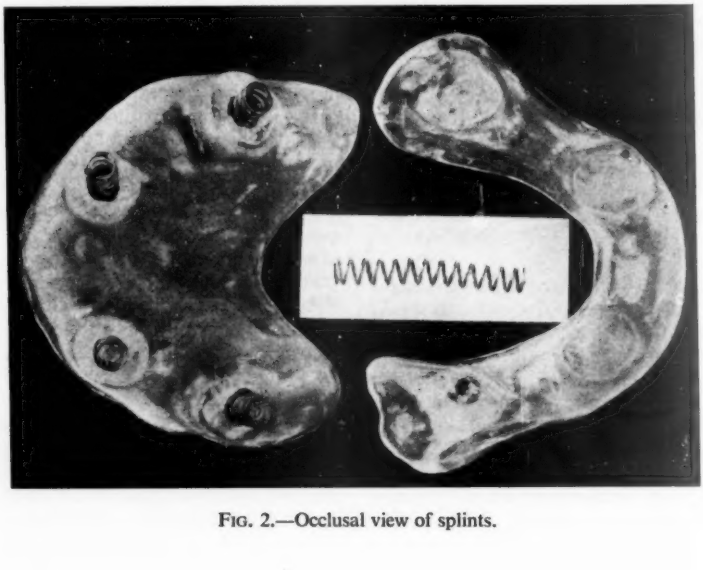

Fig. 2.—Occlusal view of splints.

with "Oxycel" and the splint inserted. By exerting pressure from beneath the mandible, the two splints were made to occlude and the mandible was then fixed in this position by a strong rubber bandage, attached to a cloth head cap.

Progress.—Slight oozing occurred during the night following the extractions, but had ceased by the next day and the splints were removed after approximately forty-eight hours. On removal of the splints, the lining layer of "Oxycel" was found firmly pressed and moulded around the upper and lower alveolus. The splints were cleansed in readiness for a reinsertion, which proved unnecessary.

Comment

It might be said that the use of a Gunning splint in combination with external immobilisation would be sufficient to apply pressure in an edentulous mouth, but it was felt that intra-oral spring pressure and extra-oral counter-pressure would be more effective. Judging by the way the lining of "Oxycel" had been moulded on to the alveoli, it was evident that considerable pressure had been exerted on to the bleeding areas of both jaws, with good effect.

Case 3

Patient F. W., male, aged 17. A known "bleeder" from a family of "bleeders."

History.—Many admissions to various hospitals to arrest hæmorrhage following dental extractions. Volunteered information that his bleeding time had been eleven minutes.

Dental Condition.—Patient was admitted to hospital with an acute alveolar abscess arising from $\overline{76}|$ roots. Facial swelling, some trismus and a temperature of 102° F.

Investigations.—Hb. 98 per cent ; clotting time 3 min. 10 sec. ; bleeding time 5 min. 0 sec ; prothrombin time 16·4 sec. ; prothrombin concentration 86 per cent ; platelets 400,000 c.c. ; Capillary fragility test, negative.

It was decided to extract $\overline{76}|$ and to control the hæmorrhage from the sockets by means of "Oxycel" packs under a splint of composition impression material, moulded to a sectional impression tray. It was realised that packing of the sockets would interfere with the drainage of the acute condition, although the patient was given a heavy systemic penicillin course, which was sufficient to control and prevent a spread of the infection.

Operation.—Fresh blood was given pre-operatively and a splint was made in the theatre prior to the extractions. The basis of the splint was a perforated type of lower impression tray, which was cut in half, leaving the handle attached to the part of the tray that was going to be used. Impression composition material was then moulded to the tray so as to form a "bite sandwich" and an impression taken of the $\overline{8—1}|$ region. With the tray in position the mandible was occluded against the maxilla to obtain an impression of the corresponding teeth of the maxilla (fig. 3). $\overline{76}|$ were then extracted and the

A

B

Fig. 3.—A, Mandibular surface of splint with remnants of the "Oxycel" pack. B, Maxillary surface of splint.

sockets carefully filled with "Oxycel" gauze. The part of the splints overlying the sockets was heavily lined with "Oxycel" gauze and the splint was then placed in position and the mandibular teeth occluded against those of the maxilla. External immobilisation of the mandible was applied in the same way as in Case 2.

Progress.—There was some oozing for approximately forty-eight hours following the extractions and the splint was removed, relined with "Oxycel" and replaced. No further oozing occurred. The swelling did not decrease for some time but the temperature fell to normal soon after the extractions.

Bleeding time estimations done subsequently to the extractions showed a rise to twenty-three minutes five days after admission and a return to five minutes after a further five days.

Comment

The splint which was used on this occasion was far from satisfactory from many points of view, but it

did help considerably in the arrest of the hæmorrhage. It proved the value of having an appliance of some sort available, however primitive it may be, in the treatment of these cases.

ACKNOWLEDGMENTS

I would like to thank Mr. C. de Vere Green, Honorary Dental Surgeon to University College Hospital, for the help and encouragement he has given me in the preparation of this paper. My thanks are also due to Mr. C. C. Sherman of the Dental Department of University College Hospital, who made the splints used in Cases 1 and 2, and to Mr. H. Bligh of the Photographic Department, University College Hospital, for the excellent photographs.

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FULL DENTURES: A NEW AND SIMPLE TECHNIQUE

BY ALEXANDER MACGREGOR, M.A., M.D., B.CHIR.CANTAB., F.D.S., M.R.C.S.ENG.

FROM the practical point of view it is clear that full dentures can be divided into two parts, viz. *anterior* from the first premolars and canines forward, and *posterior* from the same teeth backwards.

In the anterior, or visible, part æsthetic considerations must, of course, take pride of place even, if necessary, at times to the detriment of function. In the posterior part, which in the normal course of events is not visible, æsthetic considerations become relatively unimportant compared with functional efficiency.

The harmonious and natural effect of the anterior teeth depends upon the dental surgeon's skill and artistic appreciation, the introduction of acrylic teeth having made this task considerably easier. This article, however, is concerned with the masticatory efficiency of the posterior part, on which subject much has been written and many theories devised.

The natural teeth are firmly embedded in the bone and the strain of the interlocking of cusps with lateral movement in mastication is taken by the periodontal membrane and alveolar bone. Under natural conditions, however, the cusps do not appear to last very long, and in aboriginals, eating what presumably constitutes a normal human diet, the cusps are soon worn down until there is little, if any, interference. With artificial teeth on a denture there is, of course, no such anchorage and powerful movement of one raised cusp upon another is bound to tend to displacement of the dentures. It is true that in patients with high and well-defined ridges cusps on the posterior teeth may be tolerated but in the majority of patients in whom, unfortunately, the ridges are not so well defined, the cusps prove merely an embarrassment to the wearer.

As students we were taught the importance of three-point occlusion, the curve of Spee and of anatomical articulation of the posterior teeth. Unfortunately, at a later date, it is a general experience to find that the application of these theories does not always result in stable dentures.

The work of Fish in showing the importance of muscle trimming was of the highest value but even where the dentures are adequately muscle-trimmed and the fit is good, only too often the cusps of the posterior teeth have to be ground off in order to avoid tipping of the dentures owing to cusp interference. It has been pointed out earlier that the natural teeth with cusps are securely anchored in the bone. Are we correct, therefore, in endeavouring to copy the cusps of natural teeth when no such anchorage exists with dentures, if no masticatory advantage is to be derived from them ? The cusps on artificial teeth are, at best, blunt and in consequence can scarcely serve a very valuable function in shredding the food even when sufficient pressure can be brought to bear upon them. If we disregard the necessity for copying the natural teeth at the back of the mouth we can more freely consider the ideals at which we aim. The first, of course, is that the patient should be able to move the mandible in all directions with an even slide of one denture upon the other without any tendency to displacement. The second is that the action of one denture upon the other should be such as to produce a grinding and shredding action upon the food.

One method of fulfilling these principles is by the

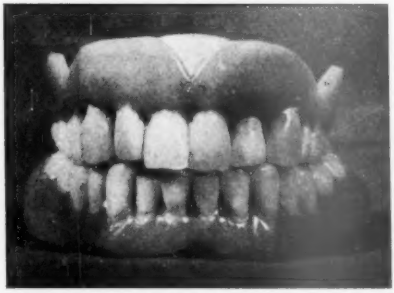

FIG. 1.—Dentures from anterior aspect showing normal appearance of teeth when viewed from the front.

use of flat ridged blocks in which the occlusal surfaces are ridged, those in the upper denture being at right-angles to those in the lower. In this way an even slide of one occlusal surface upon the other is obtained but a milling action is set up between the opposing ridges. There is, of course, nothing particularly novel in the idea, but with the advent of acrylic resins its execution has become relatively simple, and as when put into practice it appears to have great advantages it has been thought worth while to describe the technique. The writer has been encouraged by the fact that not only patients with poor alveolar ridges, but also those with quite good ridges, who have tried both dentures with posterior teeth with cusps and those with ridged bite blocks, have stated their preference for the latter type both for stability and function.

Technique

Impressions, bite, etc., are all taken in the normal way but at the stage of the try-in with teeth, only the anterior teeth are placed in position. The articulator used is, of course, a straightforward simple hinge type. To the bite registered posterior teeth are then placed in position and wax melted over the surface, giving a flat, articulating surface posteriorly with a slight concave curve in the lower and a slight convex curve in the upper. These are invested in the ordinary way, the posterior teeth are then withdrawn, after the boiling out of the wax, and ivory coloured acrylic resin is packed into the space formerly occupied by the posterior teeth and wax covering them occlusally. Pink acrylic is packed around the anterior teeth and the posterior block in the ordinary way.

In this way, the buccal and lingual contours of the posterior teeth are preserved so that with the mouth widely open, a profile view of the upper posterior teeth reveals nothing abnormal (*see* fig. 1). The flat occlusal surfaces of the dentures are then grooved longitudinally in one denture and transversely in the other. This can be done with a thin carborundum wheel (*see* fig. 3). It does not much matter whether the upper denture or the lower denture is grooved longitudinally. From the cosmetic point of view, however, it is slightly preferable to groove the upper denture longitudinally and the lower transversely so that patients do not reveal any grooving of the posterior teeth in profile view even with a wide degree of opening. If any adjustments in the bite have to be carried out it is, of course, easy to grind down the acrylic block as and when required, and equally easy to recut the ridges. The ridges and grooves appear to stand up well to use and I have not found, over a period of two years, that any have required regrooving due to the acrylic having worn. If, however, this does occur it is, of course, a simple matter to deepen the grooves slightly and sharpen the ridges. The principle can be applied equally to partial dentures though it is not so necessary for stability save where many teeth are missing and anchorage is insufficient.

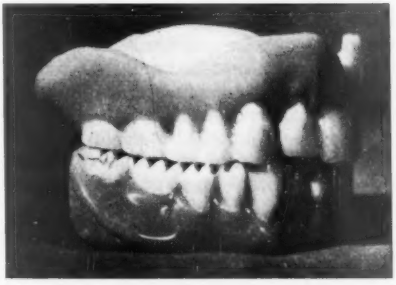

Fig. 2.—Dentures viewed from the side to show normal appearance of upper posterior teeth and transverse ridging of lower posteriors.

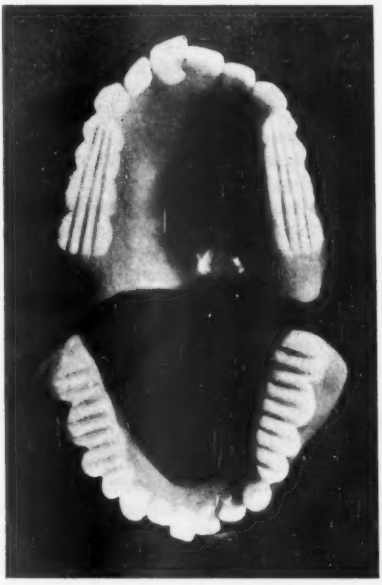

Fig. 3.—Dentures showing occlusal ridges which allow an even slide of one denture upon the other but set up a milling action with movement.

Acknowledgments

I would like to record my gratitude to Miss N. Walker who kindly took the photographs shown, and also to the many patients who have co-operated by giving me their views and impressions of different types of dentures.

PUBLIC DENTAL SERVICE IN GREAT BRITAIN WITH REFERENCE TO THE NEW ZEALAND SCHEME

By G. E. M. HALLETT, F.D.S. R.C.S.Eng., H.D.D.Edin., L.D.S.Liv.

Nothing could be more trite than to say that the dental treatment of the child is at so low an ebb as to be virtually ineffective when considered nationally. And nothing could be more poignantly true. This, nearly sixty-five years after Fisher of Dundee first pleaded for dental fitness as a requirement for school entry ; forty years after the well-known Cambridge school dental treatment plan was started ; this, ten years after a time when the school dental service was expanding steadily and surely and extending its services to embrace the pre-school child, the secondary school children, the nursing and expectant mother. What has brought this about ?

Firstly the war, which could not have come at a worse time for the public dental service. All the physically fit dental officers were steadily and inexorably drained away into the armed forces. There were rather less than 900 at the time. Naturally, the younger ones went in the larger numbers. After five or six years' nomadic existence, many came back to their former posts, which had been held open for them, but in the meantime great changes had been wrought in the nation's economy. The pound no longer bought what one five-hundredth of the dental officer's salary bought in 1939. The prosaic twopenny cabbage had become a vegetable of considerable price, sold by the pound, and many essential articles carried purchase tax of a high rate. To the young dental officer (whose family had probably increased in the meantime) his salary seemed to shrink alarmingly, and he began to look around for better prospects. He was promised better things if only he stayed on. Public dental service was going to be " The Service." Here he was already treating the priority classes ; he was in on the ground floor. A few private practitioners, returning to find their practices vanished, thought naturally enough in the same way. They became public dental officers. It was just a question of time and all would be well. Eventually July the 5th 1948 came and things were not as they had expected. The public dental service which in 1939 was shaking itself free from its inferiority complex and taking its rightful position amongst its professional brethren was forced down again. Private practice suddenly gave the promise of an assured full waiting room at all times and a monthly cheque of net value equal to two or three months of the school dental officer's salary. Small wonder, in view of the evident inability of the administrators to break the deadlock, that he threw in his hand and joined the general practitioner service.

Many with admirable devotion stayed on, but the ladder of progress had been broken. The school dental service needed not only everyone of its old members, but a fresh and energetic influx of new recruits who were not and could not be forthcoming. Salaries might creep up, but around the name of the school dental service had grown again, like a malignant incrustation, the associations of too many children and too little reward—not only in money but in *appreciation of service*. These ten years for the public dental service were the years the locust had eaten. But public clamour rises as children remain unattended, and as nights of sleep are lost over the aching abscess ; and the administrators begin to look again and consider how the clamour may be stopped. By reference to the Registrar-General's figures they find the number of children in the country. They enquire to find out how many children dental officers may treat and get varying replies, 1,500, 2,500, 3,000.

On a basis of 7 m. children needing treatment, and 3,000 children per dentist we require 2,333 dentists to operate our service. There are at present about 650 dentists still in the school service, so that we have a further 1,700 still to find. Though the number of practitioners added to the Register in 1948 was only 347, during the next few years we should see an effective increase of about 500 each year. We need, therefore, over three years' whole output from the existing schools to build up a service with 2,333 dental surgeons. Worse still, 3,000 is considered by most to be far too large a number of children to care for on a 100 per cent acceptance basis. If we reduce the number to 2,000, we now need 3,500 dentists or nearly a quarter of the present Register or seven years' output from the dental schools at the 1948 rate. The heads wag sagely and the verdict comes " it can't be done ! " At this time stronger and stronger rumbles are heard from the antipodes. " New Zealand has a scheme ; it has been in existence for twenty-seven years and is excellent ; even doctors and dentists send their own children to it, and the dentistry is done by girls of two years' training only." Being girls and being semi-trained as dental surgeons their pay is low in comparison. It is a cheap way of doing dentistry for children (whose treatment, it is implied, because they are children, must be easier and simpler than adults). This is the scheme ; this will stop the clamour—Hurrah ! How many girls will be needed ? Only 17,500 if we follow the New Zealand pattern. But the general nursing services cannot get girls in this country where their status is established, and a long line of tradition stretches back to Florence

Nightingale and beyond. What are we going to offer these girls in terms of status, salary and conditions of working? And how will their employment react upon the urgent demand for T.B. nurses, mental nurses and so on? Mr. Owen tells us that New Zealand has its difficulties over recruitment and hints at status and poor promotion prospects as causes.

The New Zealand nurse is a dental surgeon of two years' training. She takes teeth out, permanent and temporary—she fills teeth, permanent and temporary—she gives injections. Impossible then to cavil at my description of her—she is a dental surgeon. It is widely suggested that young women are excellent with children and that men find them boring, trying, exasperating and difficult to manage. Undoubtedly by careful selection (and given wide enough choice) you can secure over two years' training a young lady who *is* good with children—but as a dental teacher wholly devoted to children's problems, with a very considerable proportion of women among my students, I should not say that women are particularly felicitous in their treatment of children and that men display a general ineptitude. I would say that, for the most part, they are both pretty diffident at first, but as their interest and experience grow, that they become very good in their handling of small patients. Some men are quite hopeless—some women are impossible ; it does not go beyond that. Then the type of work. The two-year dental surgeon is limited. He or she (for either will do if you can get them) is limited in the amount and type of operative work to be undertaken. Following upon the New Zealand pattern all cavities are simple class one or box form, and only simple [*sic*] interproximal fillings can be done. A lingual dovetail calls for a five-year dental surgeon. Personally, the person who carries out a perfect medial cavity in a lateral incisor which is rotated behind the central incisor with the minimum destruction of tissue commands my respect. Root fillings, abscess cases, fractured incisors evidently are for the five-year man. Regional anæsthesia is not allowed—nor of course general anæsthesia—so abscessed teeth (deciduous and permanent) must remain untreated or be extracted under infiltration anæsthesia. The use of the inferior dental injection for painless cavity preparation and conservation is denied to the child.

I am told that the geographical difficulties are quite different in N.Z. from those in Great Britain but I do not quite see how this affects the issue greatly. It is suggested that the N.Z. nurse works in sparsely populated districts and that she may have great difficulties when things get beyond her scope—and that such contingencies would not occur here. But large areas of Scotland and Wales are very sparsely populated—and a two-year dental surgeon who breaks a lower molar tooth or exposes a dental pulp which needs capping or pulpotomy can be in just as great a difficulty in either of these areas ; or in the Lake District, parts of Northumberland and many other English counties. Much in children's dentistry requires rapid decision and as rapid skilful treatment. It is not, to my mind, a satisfactory problem to have to ring up the nearest private practitioner (probably an exceedingly busy man) or senior officer of the Service and await a matter of hours, as it well may be, before securing the correct if tardy treatment. It may be suggested that the two-year dental surgeon works only in a centre situated in densely populated areas where he or she will be under the immediate supervision of a five-year dental surgeon. Now if children's dentistry consisted only of filling box-like cavities and the removal of deciduous teeth and the occasional permanent molar, it might be difficult to argue against this special but limited training. But children's dentistry involves far wider issues than that. The children's dentist deals with the dental facial apparatus during its most active growth phase. It is highly complex mechanism and injudicious treatment may well spoil a child's features for life. This is not widely recognised but is none the less true, and not only facial æsthetics but good occlusion (the essential mechanism for the preparation of food for digestion) can be so ruined by bad treatment that untold sequelæ may follow. Parodontal disease and loss of teeth are two instances. It is impossible, in my opinion, to train an individual in two years, starting from no more than a good general education, to be, not only a good craftsman, but to exercise those qualities of close scrutiny, clinical observation, interpretation and diagnosis that are so essential for the real good of the child. This means, then, that each child must be examined frequently by the five-year dental surgeon. Suppose that, in a big centre, he delegates simpler procedures to the two-year dental surgeon. How many can he supervise, if he is not to be *himself a dental surgeon wasted?* One five-year dental surgeon to one two-year dental surgeon may work fairly well, but how difficult if the lesser-trained breaks a tooth just as the other is inserting a lining for a silicate filling ; or is taut and anxious controlling a difficult child in the next chair, or surgery. The problem gets worse if he has two partially trained dentists to supervise. From an economic point of view, it may be necessary that he control four or more. He then finds himself running from chairside to chairside doing less and less himself whilst his administrative duties grow relentlessly—as they always do. Before going any further then, let us recapitulate what the two-year dentist cannot do (following the N.Z. pattern).

(1) Firstly she cannot use regional anæsthesia with all its advantages.
(2) She is unable to administer general anæsthesia

at present administered by hundreds of school dental surgeons.

(3) She cannot attempt any form of filling which is not a simple box-like one (though she may do proximals in anterior teeth).

(4) She cannot undertake any root treatment which though not widely practised in children is nevertheless often necessary in anterior teeth, especially the traumatised ones.

(5) She cannot treat fractured incisors—an accident of daily occurrence in large towns.

(6) She cannot treat exposed pulps by pulpotomy, a notably successful expedient both in permanent and deciduous teeth.

(7) She cannot take impressions and bites and supply the small partial dentures that are frequently necessary.

(8) She cannot do any orthodontic treatment—nor any of the simple preventive orthodontics consisting of the provision of space maintainers, correction of misplaced incisors and so on.

(9) She cannot do any purposive orthodontics by extraction to allow unerupted teeth to come satisfactorily into occlusion. This is a method that requires great judgment and sober reflection upon unpleasant possibilities.

(10) She cannot diagnose incipient malocclusion.

(11) She cannot use the X-ray apparatus and interpret the films in order to confirm diagnosis. (No dental surgeon can fully undertake the treatment of children's teeth without the X-ray machine at hand.)

The two-year dental surgeon must fill every carious point and only extract when forced to do so by pain or inability to restore further. One sees then in this country a vista of all the first molars of poor intrinsic quality being carefully and perhaps splendidly restored—becoming steadily coalescing conglomerates of amalgam, only to be lost at a time when such loss will have the worst effect upon the general occlusion—and all the time and work wasted.

From a general economic point of view the scheme would need on N.Z. basis 17,500 nurses, i.e. 17,500 two-year dentists can each treat 500 children in six months or 17,500 two-year dentists can each treat 1,000 children on a basis of yearly re-inspection.

This latter figure is only very roughly true because there would be more work to do and less children passed dentally fit at the yearly inspection proportionately.

Now the number of children who can be treated by a dental surgeon, as we know him, has been variously stated as 1,500–3,000. 3,000 is, as I have said, a very high figure—but on the basis of considerable experience I would say that 1,500 is too low. I think that most dental surgeons can treat 2,000 children on a 100 per cent acceptance basis and a one-yearly re-inspection rate, *especially if they remain in their own district for several years*. With well planned work the dentally fit figure then rises to manageable proportions. With a figure of 8,500,000 children we should need 4,750 dental officers, but it must be noted that some age-groups have a very much lower caries incidence, practically none in the first two years of life, rising to 80 per cent at age 5 : so that we can reduce our figure to 7,000,000 children and 3,500 dental officers. Still, of course, a formidable task, and requiring seven years' present output of our dental schools. But one fact which must be faced squarely is that, however much we may desire and work for it, 100 *per cent of our children are not going to accept and continue through school life with full dental treatment*—indeed we should be very lucky if we could start with a general overall figure of 50 per cent. This would mean a dental service as quickly as possible of 1,750 officers. There are now not quite 750—so we urgently need a minimum of 1,000 to put the scheme under way to a new and hopeful start. How do we get the 1,000 full-time dental surgeons ?

By first creating a service in which working conditions and facilities will give free scope to the dental officers, and secondly by ensuring that the remuneration compares reasonably with that of private practice.

We can then attract from our expected output of younger newly qualified practitioners a fair proportion, at least a third of them, or about 170, into the public dental service. I can personally testify to the interest of dental students and their willingness to undertake such work, if given conditions that do not compare unfavourably with private practice. In five years we might have 800–1,000 from this source.

We could attract back from private practice many who would willingly accept a reasonably lower salary in return for regular hours, steady holidays, freedom from business worries and a reduction of administrative responsibilities.

We might then easily after four to five years rebuild our requisite service staffed by fully qualified dental surgeons who would give a full and comprehensive service to the children. All this from the existing dental schools. There are about 15,000 dentists on the Dentists Register. Is it too much to expect that $\frac{1}{7}$th to $\frac{1}{6}$th of that number should devote themselves to the priority groups of children, who in themselves constitute $\frac{1}{7}$th to $\frac{1}{6}$th of the nation's population ? Remember that, before the war, the dental service, growing as it was and inadequate certainly from a national dental point of view, was coping with the demand at that date and our public was *not complaining*. In other words the service was increasing in proportion with the demands made

upon it, and but for the war may well have stood now at 1,500 strong and still have been on the increase. We must, then, try and get back to the 1,000 figure quickly for there are still the clinics and surgery accommodation for that number, and then by zeal for our cause press on and eventually build up till we get as near to a hundred per cent acceptance rate as we can by adequate staffing. Let us have a ten-year plan with a cautious but wise first five years. More dentists are of course required for the whole population and this will mean more dental schools. Let us have them. Why put up buildings specially to train two-year dentists and drain away the lamentably small number of teachers from their proper sphere of training fully qualified dentists? Can we even begin to do it? It must not be forgotten that such a scheme as envisaged, of two-year dentists treating children, could not possibly produce any for at least two years after its inception, even if it secured all the recruits immediately, which is doubtful. Parents like to be assured of prospects for their children. There is no accommodation at the present schools. We could not have buildings for two years from now at least, or the two-year dentists for four years from now. Can we afford to wait four to five years before launching a few hundred girls and ten or twelve years before we are in a position to find out whether we have made a mistake or not? I think not. The School Dental Service is dying—Long live the School Dental Service!

Reference.—OWEN, F. (1949) *Brit. dent. J.*, **87**, 211.

SHORT COMMUNICATIONS

SARCOMA OF THE MANDIBLE? A CASE FOR DIAGNOSIS

By E. K. TRATMAN, *O.B.E.*, M.D.S., F.D.S. R.C.S.Eng., F.S.A.

Chinese, male, aged about 30–40. This is a pre-war case and the illustrations have had to be made from old lantern slides recovered in anything but good condition.

The patient had complained of a slowly growing swelling over a good many years, ten or more. It was painless, and it was only when it had reached the vast size seen in fig. 1 that the patient sought relief. At this time the tumour had become infected and there was a large cavity in the centre, connected with a sinus in the mouth and an opening at the bottom of the chin. Foul-smelling pus was constantly discharging. This stage was obviously one of simple infection, and had nothing to do with the tumours as such.

Fig. 1.—Lateral view of the case. There is no lobulation.

Extra-orally, the mandible was involved from the angle on one side round to the same area on the other. The ascending rami were not expanded, though the radiographs show they were extensively involved. Movement of the temporo-mandibular joints was still sur-

Fig. 2.—Intra-oral view. A number of the teeth have been lost and others are lying at all angles superficially, the bone having been destroyed round them. There is considerable expansion lingually with the tongue displaced. Growth does not appear to extend much beyond second premolar area.

prisingly free. The main mass was seen as a very great expansion downwards and forwards in the region of the premolars and incisors. Skin growth had kept pace with the expansion. The skin appeared normal and the surface was regular with no lobulation. The general surface was hard, indicating a covering of bone, but occasional softer areas could be found. Several pulsating vessels could be felt in the covering tissues and these vessels appeared to be derived from branches of the external maxillary artery (facial).

Intra-orally, the tumour presented a stretched, thinned mucous membrane covering the growth with prominent superficial veins and small arterioles. The teeth were badly displaced as seen in fig. 2 and were all movable.

No definite diagnosis was made. It was thought that the condition was probably a sarcoma, partly osteolytic and partly osteogenic and of very low malignancy. No other diagnosis seemed to fit the condition found as well as this.

It was obviously not inflammatory in nature. The long history of slow growth, the good condition of the patient, and the absence of secondaries are rather against malignancy, but very slow-growing sarcomata of the mandible do occur in Chinese. If it was a benign tumour it is even more difficult to place. The radiographic appearance does not suggest an osteofibroma, nor an ossifying neurofibroma. Suggestions as to diagnosis are invited.

FIG. 3.

FIG. 4.

FIGS. 3 and 4.—Two X-ray views of the tumour. A probe has been passed through the oral sinus into the central cavity formed by secondary infection. The extreme irregularity in shape of the bone pieces or calcifications can be seen though the external surface is relatively smooth.

The surface was much softer in the mouth than externally, bone being deficient over appreciable areas.

The radiographic appearance showed the mass to consist in the main of soft tissues, but with considerable areas of calcified tissue, presumably bone, very irregularly arranged. The outline very irregular in the individual portions, rather as if a flocculent precipitate had become calcified. Perhaps some were simple calcific deposits and not bone. The radiographs show that both ascending rami were extensively involved, which is clearly to be seen in fig. 4, which shows involvement up to, and into the neck of, the condyle on one side. The bone has been almost entirely replaced by soft tissues and the condyle practically separated.

Scrapings from the interior of the suppurating area showed only granulations. At this stage of the investigation, war prevented more being done.

A CASE OF ACUTE MONOCYTIC LEUKÆMIA

BY ADRIAN COWAN, B.A., M.B., B.CH., B.DENT.SC.
DUBLIN

ACUTE monocytic leukæmia is a comparatively rare disease, which runs a rapidly fatal course. Stones [1] describes a case which showed an almost daily variation between monocytic and myelogenous leukæmia. Thoma [2] refers to a case described by T. J. Cook in which the findings were closely similar to those in the present case.

Boyd-Cooper [3] describes a subacute case with findings similar to the present one, but which ran a longer course (nineteen weeks). As in the writer's case, temporary treatment while waiting for pathological reports produced a slight improvement locally.

Mrs. A. K., aged 26, was referred to the writer by her physician for treatment of what was described as Vincent's infection.

She gave a history of sore throat which had been treated for about a week, and was now complaining of swollen gums, and discomfort on eating. There had been amenorrhœa for three months.

She was a thin very anæmic young woman, in a nervous state, and convinced that she was fatally ill.

Inspection of the mouth revealed gross hyperplasia affecting the whole of the gingiva. The papillæ bulged up on either side of the teeth so that, particularly in upper and lower incisor regions, the gum almost obliterated the teeth, leaving a deep trench labially and lingually (fig. 1).

A loose root of $\overline{|6}$ was present, but otherwise the teeth were in reasonable condition. On palpation there

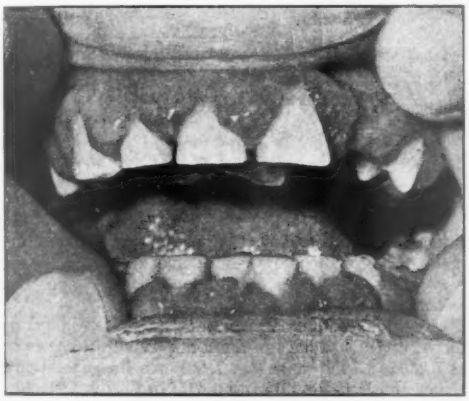

FIG. 1.

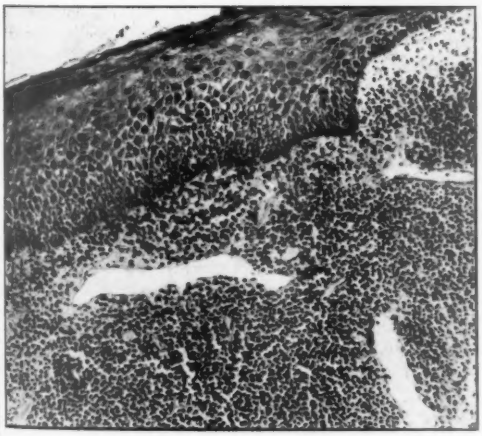

FIG. 2.—Surface epithelium with monocytes lying immediately below. × 60.

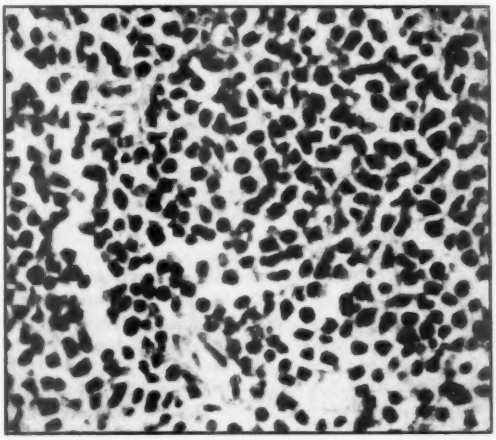

FIG. 3.—High power of monocytic cells. × 400.

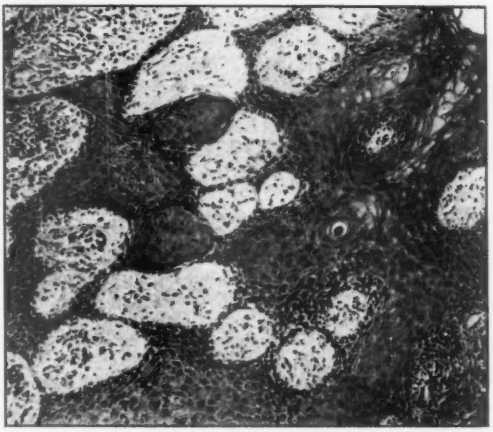

FIG. 4.—Epithelial fenestration. × 60.

was no pain or tenderness, but the gums bled easily though not profusely, and a substance resembling sebaceous material could be squeezed from the gingival sulcus. The tongue was coated, and a cystic lump could be felt on the right side of the anterior part.

The submental glands were not enlarged, but there was painless firm enlargement of the deep cervical group—jugulo-digastric and jugulo-omohyoid. Radiographs of both sides of the mandible were taken, and showed only an infected root of $\overline{|6}$.

The patient was put on a mouthwash of chromic acid, and ascorbic acid 400 mg. daily for three days.

At this stage the condition was considered to be one of the following :

(i) Pregnancy gingivitis—which was unlikely in view of the severity of the symptoms and early stage of pregnancy.

(ii) Scurvy : There was no history suggestive of vitamin-C deficiency, but ascorbic acid was given as a therapeutic test.

(iii) Epanutin hyperplasia : This was easily eliminated as there was no history of epilepsy.

(iv) Blood dyscrasia : seemed a likely possibility.

When the patient returned, she reported a slight improvement in the discomfort. She was questioned further about the lymphatic swellings, and it was found that she had had enlarged glands in the groin about three weeks previously.

A biopsy was then taken under local anæsthesia from the papilla between 21 |, and arrangements made for a blood-count to be done. Bleeding at biopsy was normal.

A tentative diagnosis of leukæmia was confirmed in the biopsy report by Professor R. A. Q. O'Meara, which read :

" Section shows formation of a leukæmoid deposit deep to mucous membrane. The cells concerned are of myeloid or monocytic type, but numerous plasma cells also appear. In addition the stratified squamous epithelium shows deep downgrowths and some cell-nest formation."

Subsequent blood film confirmed that the condition was monocytic leukæmia.

The patient was admitted to hospital under Dr. J. Lewis, who found splenomegaly, and purpuric hæmorrhages. She left after a week at her own wish and died about a fortnight later.

The case is thought to be of interest because :

(1) Monocytic leukæmia is rare.

(2) Diagnosis primarily from oral findings illustrates the value of biopsy, and the importance of co-operation between dental surgeon, physician and pathologist.

(3) It is probable that the amenorrhœa was due to leukæmia, not to pregnancy.

The writer acknowledges with gratitude assistance from Dr. J. Freedman, Dr. J. Lewis (medical notes), Professor R. A. Q. O'Meara (pathological report, and selection of fields for photomicrographs) and Mr. F. A. Murray of the School of Pathology, Trinity College, Dublin (photomicrographs).

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[1] STONES, H. H. (1948) Oral and Dental Diseases, p. 542. Livingstone, Edinburgh.
[2] THOMA, K. (1944) Oral Pathology, p. 1196. Second edition. Kimpton, London.
[3] BOYD-COOPER (1944) *Brit. dent. J.*, 76, 1.

DEMONSTRATION AT THE ANNUAL MEETING

PRECISION PREPARATION FOR JACKET CROWNS

By W. ROLAND CLEVERLEY, L.D.S.Bham.

A SIMPLE method for preparing central and canine teeth to receive jacket crowns, is by the use of a special instrument known in the engineering world as an end cutter (hollow end mill cutter), but instead of being steel the cutting edges are coated with diamond dust.

They are made in two sizes C1 (small) and C2 (large) and have diamond impregnated on a small flange on the outer side, bottom edge and inside the cylinder, also two types C1 S (safety) and C2 S (safety) which have no diamond on the outside and should be used when there is a danger of damaging the adjacent teeth (fig. 1).

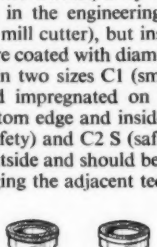

FIG. 1.

Proceed as if preparing for jacket crown, i.e. pulp vitality, X-ray for size of pulp chamber and note position of cornua. Remove all caries and fill with zinc oxyphosphate cement. Mark with a blue pencil the median line of the tooth and with a knife edged diamond disc make a shallow line down the enamel.

From now all further preparation is under a jet of cold water.

Use a thin diamond disc with the safe side to taper the mesial and distal sides of the tooth, using the centre cut as a guide to the taper (fig. 2). When the separation is large enough try on by hand the C1 or C2 instrument.

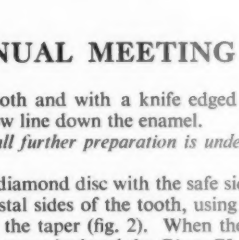

FIG. 2.

With a straight handpiece, the heavier the better, cut up parallel with the long axis of the tooth, until you just touch the crest of the interdental gum tissue (fig. 3).

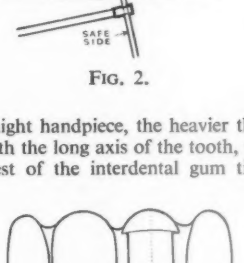

FIG. 3.

Direct C1 or C2 head on against the labial side and with slight pressure work it up to the cervical margin and extend slightly subgingivally (fig. 4). The boss of the enamel

FIG. 4.

formed on the labial side gives you complete control of this delicate operation and a perfect gingival shoulder is obtained.

Reduce natural length of tooth and remove all the surplus enamel lingually and labially, as the sides are parallel taper with discs. Follow the natural contour of the tooth to preserve the cingulum as an aid to retention. I usually leave the lingual shoulder just as the instrument cuts it and do not carry it subgingivally. Do the final finish and polish as you prefer.

These instruments save a very considerable time in jacket crown preparation and prepare the difficult shoulders with accuracy and precision.

Not every tooth conforms to normal, the majority of centrals and canines cause no trouble but owing to the oval shape of their roots lateral incisors suitable for this technique have to be selected.

Orthodontic Notes

The Intermaxillary Space—Normal and Abnormal

THE "free-way space" or intermaxillary space separates the upper and lower teeth when the mandible is at its physiological rest position where it remains when not in actual function.

Rest position records were taken. When the patient could go to the rest position with regularity, the lips were gently parted and a fast-setting plaster injected between the teeth. Casts were mounted by means of this plaster record, and the intermaxillary space studied. The bucco-lingual relation was studied by orientating one set of casts in the rest position and another in occlusion. Black plaster was poured from the lingual aspect completely filling the space lingual to and between the teeth. The plaster block was carefully trimmed, beginning at the most distal tooth. The trimming was stopped at significant landmarks such as grooves and tips of cusps, and tracings made of the maxillary and mandibular teeth in the rest position and in occlusion. This shows the extent of the space and the relationship of the teeth. The intermaxillary space in the posterior region is long, irregular, and rectangular, becoming smaller vertically towards the posterior: the upper and lower surfaces are nearly parallel despite the irregular contours of the teeth. In good occlusion the same relation of cusp and sulci exists as when the mandible is at rest, except for the presence of the intermaxillary space. The mandibular teeth close from rest directly into occlusion in these cases.

The intermaxillary space has three dimensions, mesio-distal, bucco-lingual, and vertical. When the occlusion is excellent the space is regarded as normal and the general pattern similar in all cases. The upper and lower margins of the space as seen from the buccal aspect are wavy and irregular. These surfaces are formed by the cusps, grooves and fossæ. At various points of sectioning bucco-lingually, the surfaces are different in the same arch and in the opposite arch, and in good occlusion the projections of one surface are directly across the space from depressions in the opposite surface. The upper and lower teeth are more or less parallel from buccal to lingual when sectioned from behind. The same distance is maintained between the occlusal surfaces at any selected point, and these parallel surfaces form the upper and lower borders of the space. In a normal case, the mandible closes directly into occlusion at right-angle to the occlusal plane. In a mandibular displacement, laterally or posteriorly, caused by an occlusal interference, the path of closure is normal until the point of premature contact is reached, when the mandible is directed to an abnormal occlusion due to a premature occlusal contact. This results in a distorted intermaxillary space.—ARTHUR G. FREEMAN, *Northwestern University Bulletin*, **59**, No. 8, 21.

Simplicity in Orthodontic Mechanism

DURING orthodontic treatment, all the structures are in a state of change as the result of growth changes; periods of advantage may be selected for active treatment, so that when normal function and anatomical balance are established, later growth changes may be used in augmenting and rendering permanent the benefits of treatment. The ninth year is deemed logical providing developmental levels and dental age are favourable. Health, before, during, and subsequent to orthodontic treatment is important, for disease may affect the structures which treatment influences. Our concept cannot be limited to malocclusing teeth, nor can we think of the denture as an isolated object but rather as a part of the dento-facial area and an organ having many dependent relationships. We must admit that numerous cases are untreatable and that where the disproportion between teeth and other facial structures is unmistakably apparent, the removal of teeth is essential. My plan is to call in the father or mother, or both, and other direct relatives as available, so that an idea of the patient's genetic background may be obtained. No appliance is a panacea, whatever the propaganda on its behalf. Its operation should be as direct and simple as is consistent with efficiency. Each dental arch may be considered as being composed of five segments: one frontal (incisors); two lateral (canines and premolars); two posterior (molars). By controlling these segments at the proper time, we can cause the denture and its supporting structures to assume normal relationship and continue their development; here we deal with the dental age rather than chronological age. Treatment may be carried out in most cases with six bands and a labial arch wire, and a lesser number of bands on the lower teeth with a removable lingual arch. In no case should it be necessary to employ a labial and lingual arch in the same jaw. I hold a strong belief that cases should be treated during the mixed dentition so that canines and bicuspids are erupting during the period of active treatment. Appliances are never removed, except for re-cementing, until active treatment has been terminated; the period is never long; I do not favour removal and replacement of appliances from time to time. —MCCOY, D. D. (1949) *Amer. Journ. Ortho.*, **35**, 485.

BRITISH DENTAL JOURNAL

JANUARY 20, 1950

THE JOURNAL

THE previous number of this, the 88th volume of the Journal, was the first one to be circulated to the whole of the membership of the reconstituted British Dental Association. At one bound the circulation was increased from just over ten thousand to nearly fourteen thousand copies. It had at one time been feared that the combined allocation of paper of the Journal, the *Mouth Mirror* and the *Dental Gazette* would barely suffice to provide a journal of the pre-amalgamation size for the whole of the increased membership. The abolition of paper rationing of periodicals has now, however, not only removed any doubts on that score, but has made it possible to combine an increase in the number of pages in the Journal with a relaxation of the austerity standards imposed by wartime conditions. One result of this relaxation is that it is now permissible to use a better grade of paper. As a consequence this issue of the Journal marks a partial return to pre-war practice—and an end to the hybrid appearance of some recent issues in which two different grades of paper were used in the same issue—a compromise dictated by the desire to do full justice to the illustrations of important articles without unduly restricting the space available for other matter. This change, in addition to improving the appearance of the Journal, will also make for easier reading, as both print and illustrations will stand out more clearly than they did on the thin wartime paper on which the greater part of the Journal had perforce to be printed in recent years. Coupled with this it is hoped, as and when sufficient supplies of paper of the required grade become available, to extend the gradual improvement in type sizes, which was instituted last year. Unfortunately the ending of rationing does not mean that the supply position has yet been fully restored to the pre-war standard, and it may well be some years before those responsible for British periodicals will cease to have cause to envy their American and Scandinavian colleagues their apparently unlimited supplies of high grade paper. In the meantime, it is a fortunate coincidence that the increase in the circulation of the Journal should have come at the same time as improvements in the make-up became possible. It is to be hoped that the improvements now being made, welcome as they are, will prove to be but precursors of further improvements in the not too distant future.

Just as a free and independent Press is essential in any democratic community, so a journal is an indispensable adjunct to an organisation such as the British Dental Association. Moreover, every increase in the size of the membership enhances the importance of the part the Journal plays in relation to the work, both scientific and political, of the Association. The steady growth of the overseas circulation—a growth hardly checked by the war—is a gratifying sign of the important place the Journal has come to occupy in the dental literature of the world. No less significant in this connection are the numerous scientific articles submitted for publication in the Journal by overseas authors and the number of requests, received from abroad, for reprints of articles which have appeared in its pages. Some of these articles necessarily have a direct appeal to a minority only of the readers of the Journal but they, nevertheless, afford all of them a ready means of keeping in touch with the latest developments of the dental and allied sciences, and to many they are an almost indispensable adjunct to post-graduate study. It is, however, in respect to what may for convenience be described as the political aspect of the work of the Association that the increase in the membership carries with it a corresponding increase in the usefulness of the Journal in the activities of the Association. The printed word can never take the place of free and open discussion but, with every increase in the size of an organisation it becomes more and more an essential means of intercommunication between the governing bodies at the centre and the individual members at the periphery. It also provides a medium through which the latter can express their opinions to a wider audience than that provided by their own branches and sections. It is, however, a mistake to suppose that articles, reports or letters in the Journal provide a substitute for personal interchange of thought and free speech. At best they can provide no more than a summing up. This is a useful and, indeed, essential function but its value will depend in a very large measure on the extent to which it is an accurate representation

of the considered opinion of the members as a whole.

In this province the business of the Journal is to supply all the relevant facts to members of the Association, to keep them in the closest possible touch with the proceedings of the Representative Board and of the branches of the Association and to provide them with opportunities for the expression of their individual opinions. The second of these tasks can be satisfactorily accomplished only with the co-operation of the officials of each of the branches. In the past, reports of branch meetings formed a regular part of the contents of the Journal but a glance through the pages of the Supplement for the past year will reveal that the proceedings of only a minority of the branches were regularly reported. This is to be regretted since reports of such meetings are not only of interest to members in other branches but they also serve to stimulate interest in the branch itself—a consideration to which the increase in the membership lends weight. The work of honorary secretaries of branches has grown considerably in recent years and it is perhaps expecting too much of them to suggest that they should supply reports of all their meetings to the Journal. Where this is the case the practice, which has already been adopted by some branches, of appointing an editor seems to be worthy of consideration. The increase in the number of pages in the Journal must of necessity be on a modest scale and there are many claims on the available space. In view, however, of the importance of the work of the branches none is more pressing than that for adequate publicity for their proceedings.

NOTES AND COMMENTS

New Year Honours

THE congratulations of the profession will be extended to Major-General H. J. Higgins, Director of the Army Dental Service on the *C.B.* conferred upon him in the New Year Honours list, and to Professor R. V. Bradlaw, Dean of the Faculty of Dental Surgery of the Royal College of Surgeons, whose work in connection with the establishment of the Faculty and its subsequent activities, has been recognised by the conferment of the *C.B.E.* Other honours of interest to the profession include the advancement of Sir William Scott Douglas, Secretary Ministry of Health, to *G.C.B.*, the knighthood conferred upon Dr. J. A. Charles, who has been appointed to succeed Sir Wilson Jameson as Chief Medical Officer to the Ministries of Health and Education, the *C.B.E* awarded to Mr. H. Lesser, Chairman London Executive Council, and the *O.B.E.* conferred on Mr. G. Beardsworth, chief organising officer of the Union of Shop, Distributive and Allied Workers, a member of the National Joint Council for Dental Technicians.

Dental Officer's Reports

Acting upon representations from the Liverpool Council, the Management Committee of the Executive Council's Association (England) decided to ask the Ministry of Health to give instructions that when a case was referred to a dental officer by an Executive Council, his report should, in the first instance, be sent to Council, and for the dentist to be advised by the Council of the result of the reference and, *if need be* (our italics), supplied with a copy of the report. It is difficult to understand the reasons for this request. That the Council should be informed of the result of the examination and of the dental officer's opinion goes without saying. It is, however, a fundamental principle of professional ethics that when a practitioner is consulted with reference to treatment which has been given, or is proposed to be given, by another practitioner, it is his duty to communicate the results of his examination to his colleague. This principle was maintained under the old Dental Benefit Regulations and any departure from it would place dental officers of the Ministry in an invidious position in relation to their colleagues. We cannot, therefore, think that it is likely that the Ministry will accede to the request that has been made to change the present procedure.

Thirty Years Ago

THE following quotation from the speech of the Minister of Health, Dr. Addison, at the opening of the new headquarters of the B.D.A. in Russell Square on January 23, 1920, is of special interest in view of recent happenings. Referring to the membership, which consisted of three-quarters of those whose names were entered in the Dentists Register, he said : " I hope you will have them all. I do so sir, not because I have any particular desire that any one association should be aggrandised but simply because I hope there will some day be only one Association. It is a plague of some professions that they have so many associations. It will be a great advantage to your profession if you manage in one association to get together a body of men who, with all your necessary differences and sectional interests, will combine as well as they can to state your case."

"Health and the Family"

DR. CHARLES HILL has written a stimulating little booklet of some 36 pages under this title, which is published by the Conservative Political Centre at the popular price of 1s. That this is in no sense a political pamphlet can be judged from the fact that the only *obiter dicta* which might be thought to have any direct reference to current party politics is the statement: "Under no pretext or excuse of adding to the common good should governments disregard the desires and hopes of individuals, for in so doing they destroy human happiness in a misguided effort to increase it." The booklet is written in the author's well-known breezy style in language which will be readily understood by lay persons. As might be expected, it abounds in pithy aphorisms which lend themselves to quotation. Typical examples are: "More people are ill because they are unhappy than are unhappy because they are ill," which might be said to strike the keynote of Dr. Hill's message, and "There are few jobs, however humdrum and however slight the calls on intelligence and skill they make, which cannot provide a source of satisfaction when they are properly done." Throughout the emphasis is on the promotion of wellbeing rather than on the treatment of disease. If Dr. Hill is elected to represent Luton in the General Election he will be a notable addition to the medical members of Parliament.

Expenditure on Dental Treatment in U.S.A.

ACCORDING to an estimate made by the Bureau of Foreign and Domestic Commerce, of the United States Department of Commerce, the total expenditure of the people of the United States on dental treatment during 1948 was $864 million. This is over three times as much as the corresponding figure, $276 million, for 1933, and more than twice as great as that for 1940 when such expenditure was estimated at $419 million. Figures for the period prior to the slump years of 1932-34 and those of the succeeding years suggest that the rate of expenditure on dental treatment provides a fairly sensitive barometer of the prosperity of the nation.

Fifty Years Ago

From the "Journal of the British Dental Association," January 15, 1900.

IN the past twenty-five years such changes have been wrought, such advances recorded, such reforms effected, that though much remains to be done, the dental practitioner of to-day occupies a position in relation to the lay world and the general medical world that a generation ago was hardly dreamed of. The self-devoted energy of a few, whose names will perhaps soon be forgotten, obtained for us recognition and legislation, and finally organisation, and now the Association is nearing its thousand members. But the point we wish to insist upon is this, that whether non-members seek it or not, they cannot help enjoying their share of the privileges that others have obtained for us all.

From an Editorial. This issue of the Journal was sent to all dentists on the Regis[illegible].

LETTERS TO THE EDITOR

THE BENEVOLENT FUND

SIR,—Ref. letter headed the Benevolent Fund in *B.D.J.*, Jan. 6, 1950.

I received more begging letters this Xmas than at any other time that I can remember, including one from the Southern Counties Branch.

I recently tried to obtain a locum and all that was available was a very old qualified dental surgeon who had been retired many years back, who wanted a tremendous fee and percentage for a very few hours' work.

Charity begins at home and one would willingly give, but who are these people who want benefit in a profession which has no unemployment and in a state which insures one from the cradle to the grave.

Westholme,
134a, *Sandgate Road,*
Folkestone.

Yours faithfully,
GEORGE G. ELLIS.

SIR,—I am grateful to you, sir, for allowing me to read Mr. Ellis' letter.

I am not ungrateful to him for writing it, for it gives me the opportunity of answering, not only himself but, may be, others who are thinking that in a profession which has full employment there is no distress.

Mr. Ellis wishes to know who are these people who need help.

Those who come to the Fund for help have all been severely buffeted by the world, it is our aim to lessen their pain; it is difficult to conceive of anything more hurtful to sensitive persons than having their distress paraded. The Fund's cases are all treated in the very strictest confidence.

It is one of the Fund's tenets that when it is convinced that help is needed it is given as generously as can be afforded to give relief and in no spirit of unctuous charity.

The Committee of Management fully realises that it is serving our own people and does its best to help up those who are down and encourage them in maintaining their dignity and pride.

I am away from the files of case sheets but these are the kind of cases with which the Fund is dealing:

Two cases of young men who made heroic attempts to save life, but in doing so lost their own, leaving widows and children. It takes much money to feed, clothe, and educate children, even when state-aided. Is there any young married dental man who would like to think of his wife in the early days of widowhood, trying to manage on the little he has saved and the few shillings a week from the State, until she can fit herself to earn, to keep herself and children?

Another case, I recall, was that of a colleague who had

very many months of illness—practice dwindled away, resources all mopped up—the Fund helped the practitioner and his wife. The story has a happy ending for he recovered and one of their first acts, when he was practising again, was a letter of thanks and a subscription as a thank-offering.

Please Mr. Ellis, send me a subscription, the utmost value will be wrung out of it in the service of those whom I am sure you would wish to help, and I hope that the giving of it will bring you much happiness.

Your obedient servant,

13, *Hill Street*, *Berkeley Square*, *W.*1. R. G. HEEGAARD WARNER, *Chairman of the Committee of Management of the Benevolent Fund.*

SUCKING HABITS

SIR,—Reading the most valuable and exhaustive paper by Humphreys and Leighton in your issue of January 6, I was a little surprised to find no mention under the heading of "Sucking Habits" of the child's use of the unoccupied hand to fumble something woolly or hairy, not that this by itself can have any relation to post-normal occlusion, but because of its interest as part of the sucking syndrome.

Does it occur with the use of the dummy ? is one of the questions which the investigation might have answered.

It is interesting to speculate on the origin of this curious connection between sucking and hairiness in the human infant (I know of one child whose finger always went into his mouth when, with his other hand he touched the dog.) Some explain it in Freudian lines, may be correctly, I do not know.

The baby often puts a hand on its mother's breast, soft and warm, while sucking. Does its racial memory go back to the days of its ancestors, when it was also hairy ?

Prior's Close, *Walsham-le-Willows*, *Bury St. Edmunds*, *Suffolk*. Yours faithfully, J. H. BADCOCK.

THE AMALGAM RESTORATION

SIR,—The recurrent question of the amalgam restoration has received so much learned attention that there would appear small reason to worry it further. Merely it is the disparity which exists between the orthodox treatise on amalgam restorations and the orthodox amalgams as seen, which gives rise to question.

It is well to recall sometimes that learning is related eventually to practice, that current practice is related not only to present circumstances, but also to past and present teaching, that the average English, or any other average amalgam has no very obvious relation to the polished articles we read on the subject of amalgam.

If I were to find fault with the pundits it would be on the matter of first principles.

A technique for anything must fulfil certain elementary conditions if it is to be successful. Firstly it must be inherently simple. Secondly it must be tolerant of abuse. Thirdly it must be gratifying in its own right. Fourthly it should be capable of refinement, but be independent of such refinement.

I would condemn the average amalgam on points three and four. I would condemn the pundits on points one and two.

I would like to add, in parenthesis, that I would regard as insufficiently gratifying an amalgam restoration which left the operator's mind in any doubt as to the value of radical extension. Or left him dabbing diseased tissue with silver nitrate. Measures which savour of half-way house savour also of half-confidence, if not indeed of disillusion.

Whatever the pundits think or say it is the clinical amalgam with which we are all concerned. The amalgam that was never polished. Was the operator remiss ? Or was he merely resigned to the fact that, try as he might, the technique he had been taught did not produce a filling which would retain either an edge or surface ? The filling which has so obviously failed to arrest the carious process, was this a curtsy to some pleasing theory ? Or was it in fact the despairing gesture of a man beaten at his own game ?

The good old English mouths that harbour so much of failure, should they be laid fairly against our professional conscience or should they be laid more fairly at the door of those who taught us ?

For my own part I have no doubts. I was the graduate of a reputable and orthodox dental school. I have discarded much, if not all, of what I was taught. I had to. The orthodox, in my hands, was inadequate. Try as I liked my amalgams were disastrous. I could arrest the carious process—I could not make a lastingly presentable restoration.

In parenthesis again I might add that now, some dozen years later, I still see some of those early fillings, they do their job but they look atrocious. They represent the best I was able to achieve with the method I was taught. The squalor of their appearance would have disheartened me beyond hope long before now.

At the risk of being over-insistent, what was the problem that I was lucky enough to solve in those early days ? It was the problem of producing something which would sustain my own morale. That was all. The answer was easy when I had found it. I merely had to mix my filling before I put it in the cavity.

I do not propose being any more explicit than that. It took me two and a half years to find that answer, and I had to discard an entire technique to achieve it, but with that behind me the rest was just adventure.

And now, sometimes, I feel an almost wicked glee as I glance at some past handiwork, there is my signature, careless or florid as the mood took me, but a signature and unmistakable. No painful forgery of someone else's art.

If I were allowed one pious hope it would be, I think, that we could forget the frills and the refinements, because far too many amalgams are way beyond the hope of frills, they start at their very inception with a false premise.

I have not been able to trace the quotation but I have been told that Gayler said that the perfect amalgam was unworkable. If that statement was in fact made by her I can only imagine that it was made with the idea that the material was unworkable using the existing technique. If that was the sense of the statement I endorse it wholeheartedly.

20, *Crouch Street*, *Colchester*. Yours faithfully, MICHAEL FROST.

THE WORK OF THE SCHOOL SERVICE

SIR,—For the last four years I have been treating boys aged between 15 years and 16 years, who have joined the Royal Navy from school.

I think a word of congratulation is in order to the School Dental Service for the work they do. Although only 20 per cent of the boys entering have received some treatment, that work is always of a high quality. I wish there were more of it.

H.M.S. "St. Vincent," *Gosport*. Yours faithfully, K. FLETCHER.

REVIEWS AND ABSTRACTS

THE HEALTH OF THE SCHOOL CHILD. Report of the Chief Medical Officer of the Ministry of Education for the Years 1946 and 1947. London. H.M. Stationery Office, 1949. 3s.

It is with a hollow laugh that many will read in the opening sentences of the chapter on the School Dental Service that it is gratifying to note that many Authorities have not been content merely to aim at a return to pre-war standards but have inaugurated schemes of extensive re-organisation and expansion. Others will consider the position too grievous for laughter of any sort.

The principle that except in cases of special urgency the same officer should not administer a general anæsthetic and also perform the extractions is now to be strictly observed, we are told. This is a good principle and was only relaxed during the war as an unavoidable temporary measure. We are glad to hear that it is avoidable now.

As the local health authorities now have a statutory duty to provide for the dental care of pre-school children, we read, more of these children should receive conservative treatment than has so far been the case. When the school dentist finds that 5-year old children have received such treatment he should make every effort to treat them by conservative methods—a laudable suggestion. This report bears the date 1949 but when was it written? It seems somewhat out of relation with the current situation.

There are some interesting references to dental caries experience which has been investigated in seven areas. A substantially similar result was obtained in most cases (average DMF teeth per child at 5 years 4·3, at 12 years 2·9) but Manchester showed a higher rate of 4·7 at 5 years and Nottinghamshire 4·2 at 12 years. There seemed no evidence, the Report states, of a return of caries incidence to its pre-war level in the 5-year age-group. Mr. B. R. Townend found no significant difference between industrial and rural areas in the West Riding of Yorkshire where the 5-year group numbered over five thousand. These surveys were well worth doing and it is to be hoped that it will be possible to repeat them at regular intervals.

DIAGNOSE UND THERAPIE DES INFIZIERTEN WURZELKANALES. von Dr. med. dent. Florian Prader, privatdozent fuer konservierende Zahnheilkunde am zahnaerztlichen Institut der Universitaet Basel. Mit 153 Abbildungen, 8 Tafeln und 48 farbigen Mikroaufnahmen. Benno Schwabe & Co. Verlag, Basel, Pp. 225. Price Fr. 26.

The book begins with a description of the different forms of pulpitis for the guidance of the dental practitioner in his treatment, especially as regards root filling. There is the toxic pulpitis following caries, as well as that encountered under a silicate or amalgam filling. Another form is represented by infection through gingival pockets. Two rare forms of pulpitis are described: the infection of the pulp owing to rapid abrasion of dentine without formation of secondary dentine, lastly the haematogenous pulpitis occurring after previous general infection of the patient.

The author emphasises the importance of ascertaining the blood picture of the irritated pulp. His method is described and its simplicity stressed.

A further means of securing the diagnosis is the bacteriological test: instead of test tubes Prader introduced ampules filled with a 2 per cent glucose and sterile saliva mixture with bromcresolpurple as indicator.

The next pages deal with disinfection and sterilisation of the instruments used in pulp and root canal treatment. Prader prefers the autoclave; syringes should be boiled and should not be kept in 70 per cent alcohol, as spores will not be killed in this solution. Asphalin is recommended for disinfection of paper and gutta-percha points, etc.; stero-oil for hand pieces. The use of rubber-dam is not essential, as droplet-infection has not been observed in root-canal treatment.

Root canals must be widened with appropriate instruments such as broaches, reamers, files. Organic acids should be avoided, and a 10 per cent trichloraceticcitric acid mixture is recommended; the canal should be washed with hot water and a special apparatus is described. Secondary infection of the root canal is dangerous, as it renders all aseptic measures useless.

The last chapter deals with apical infection.

As the author rightly points out in the preface, the student should be familiar with the latest developments in dental research. Prader's book will certainly assist towards the attainment of this end. The general practitioner too will find very valuable information on root-canal therapy and a wealth of diagnostic hints. The book is highly original and it shows on almost every page the author's personality. The photomicrographs, including the coloured ones, are all his own work, they are excellent. The 450 odd references are mostly taken from the German dental literature (Swiss, German, Austrian) American authors being quoted to a much lesser degree. Hardly any English publications are mentioned. This is not surprising as Prader is dealing with a problem which has not received much attention in this country.

The book can be recommended to those who desire to increase their knowledge in this branch of conservative dentistry.

The Dental Hygienist: An Editorial Note in the *Journ. Amer. Dent. Assoc.* says the profession must make greater use of competent auxiliary aids, including the dental hygienist, if dentistry is to extend its services to more people. The hygienist has proved her worth. She has demonstrated her ability in the private dental office, in industry, and in educational institutions. Her services have been approved by law in all but four States and recognised as an essential adjunct to the profession by the House of Delegates of the Association (The American Dental Association). Her functions have never been clearly defined, nor has a comprehensive study of the curriculum offered by schools been made. She must have as a minimum, four years high school education and a dental hygiene training course covering two academic years. The dental hygienist cannot legally function without the supervision of a dentist, so her duties and activities are of tremendous importance to the profession and must be under surveillance. If the profession is to extend its services to greater numbers, it must employ more auxiliary aids; in accepting this responsibility the profession assumes responsibility for their education.—(1949) *Journ. Amer. Dent. Assoc.*, **39**, 590.

Essentials in Endodontic Practice.—The habit of surgical cleanliness is not easy to acquire in the dental surgery but is absolutely essential for those who engage in endodontics. The various kinds of absorbent points, pellets and gauze squares can be sterilised in a small autoclave which is preferable to the pressure cooker used by some people. Root files, reamers and broaches which cannot be subjected to moist heat are sterilised chemically and then dried and stored. Other larger instruments are sterilised by boiling. As the counterpart of adequate sterilisation facilities, routine bacteriologic examinations should be available. Such equipment need not be elaborate and need consist only of a small incubator and tubes of broth. Since we look to the periapical tissues for repair, if successful results are to be obtained trauma by careless manipulation must be avoided. A fine sterile wire should be radiographed in the canal as a preliminary, after rubber dam has been applied. By this means the length of the canal is gauged and all instruments used subsequently can be checked for length against the gauge wire, using " stops " of tubing or discs. In the past many drugs have been used without regard for their caustic effect on the periapical tissues. It now appears that the antibiotics will supersede most of them. Mechanical cleansing of the canal is however of supreme importance. The final step of inserting a well adapted and well tolerated root filling taxes the skill of the best operators. The process of healing is complicated and retarded by a filling which protrudes beyond the apex. If the filling is short, a space is left where exudates may accumulate and may later become a focus of infection. Similarly a porous filling is a hazard. Gutta-percha is a favourite well tolerated material but it is very difficult to prevent overfilling during the condensing process. In order to facilitate root filling the author in 1931 introduced tapering silver points corresponding in calibre to the graduated root canal reamers. The apical portion of the canal is enlarged with reamers until it assumes a circular cross-section which the appropriate silver point fits exactly. The coronal part of the canal is packed with gutta-percha points in order to wedge the silver point firmly in position. A number of radiographs of successful cases are reproduced.—E. A. JASPER (1949) *Oral Surg. Med. Path.*, **2**, 1199.

Amount of Mercury Vapour in Air of Dental Surgeries and Laboratories.—The inhalation of air laden with mercury vapour may produce chronic mercury poisoning, the symptoms of which are headache, irritability and respiratory irritation, and in more severe cases a metallic taste and stomatitis. It has been suggested from time to time that dentists who use considerable amounts of mercury might be exposed to hazards on this account. Stock claimed that a concentration of 0·001 to 0·01 mg. per cubic metre of air was sufficient to cause mercury poisoning. Other workers have estimated the toxic concentration to be 0·1 mg. per cubic metre. The present investigators estimated the mercury vapour concentration in 50 dental surgeries, by means of a mercury vapour detector which could be simply plugged into the electric mains, and with which the vapour concentration could be measured directly. The detector makes use of the fact that ultra-violet light is absorbed or scattered when it passes through an atmosphere containing mercury. Expressing the toxic concentration of 0·1 mg. per cubic metre of air as 50 for the sake of simplicity, the average findings in dental operating rooms were 3·2, with a high of 12 and a low of 0. Orthodontists' offices, as was expected, gave low readings and averaged 2, while commercial dental laboratories gave high readings, averaging 8·6. The surgeries of dentists who acknowledged using considerable quantities of mercury gave consistently high readings. The readings were highest close to the floor. It is concluded that although the concentration of mercury vapour is proportional to the amount of mercury used, in none of the cases investigated did the concentration approach the threshold for toxicity.—L. I. GROSSMAN and J. R. DANNENBERG (1949) *J. Dent. Res.*, **28**, 435.

[This study was carried out during the springtime. It is probable that in surgeries under wi..ter conditions with artificial heating and reduced ventilation the volatilisation of spilled mercury would increase. The hazard is one that dentists would do well to bear in mind; physical contact with mercury should be avoided as much as possible, as should the spilling of mercury, and attention should be paid to ventilation. This matter is dealt with in greater detail in a paper by M. BUCKELL *et al.*, *Brit. J. Indust. Med.* (1946), **3**, 55.—ED. *B.D.J.*]

Aureomycin : Its Use in Infections of the Oral Cavity.—Aureomycin is an antibiotic derived from the mould *Streptomyces aureofaciens* which has marked ***in vitro*** activity against a wide range of gram-positive organisms. It is effective when administered orally and, unlike penicillin and streptomycin, does not permit organisms to become drug fast to any extent. Aureomycin was administered in seven cases of pericoronal infection, two cases of herpetic stomatitis, two of cellulitis, two of osteomyelitis and several alveolar abscesses and other cases of acute infections. No toxic or allergic manifestations were noted but some reported gastro-intestinal disturbances. The effect in most cases was markedly beneficial even where penicillin had already been used without a satisfactory result. Noteworthy results were the dramatic effect of aureomycin in the two cases of herpetic stomatitis and the rapid relief of the symptoms in most of the other cases.—H. G. JACOBS and M. H. JACOBS (1949) *Oral Surg. Med. Path.*, **2**, 1015.

The Role of Oxalates in Rat Dental Caries.—It has been observed clinically that natives of the South Pacific who subsist on native food such as taro root, which is a carbohydrate food containing oxalates, develop very little caries but are subject to much salivary calculus. Oxalic acid when added to acid beverages prevents the dissolution of enamel otherwise produced by such beverages. It was thought that oxalates might have some caries-preventing effect. White rats were divided into a number of groups. Control groups received diets known to be caries-producing in these animals. The other groups received similar diets but with various amounts of oxalates added. Fourteen weeks later the animals were killed and the caries incidence assessed by a combined macro- and microscopic technique. Considerable calculus like deposits occurred within the grooves of the oxalate-fed rat molars, but there was no significant difference in the caries incidence between these rats and the controls.—C. A. SCHLACK (1949) *Oral. Surg. Med. Path.* **2**, 811.

Sensitisation to Denture Material as a Cause of Angular Stomatitis.—Seven cases are reported in which patients wearing dentures complained of soreness at the angles of the mouth associated with soreness of the gums and, in two cases, with a rash on the face. In some cases the dentures were constructed of vulcanite, in others of plastics, and in all cases the dentures were worn at night. With the exception of one case, patch tests, performed by strapping moist scrapings from the denture in contact with the skin for forty-eight hours, were positive. The symptoms disappeared when new dentures were constructed of another material which gave a negative patch test.—H. R. VICKERS (1949) *Brit. Med. Journ.*, **2**, 1091.

The High Incidence of Cervical Dental Caries Among Drug Addicts.—During the observation over a period of years of large numbers of drug addicts, the high frequency of cervical caries was noticed. This was confirmed by a thorough statistical survey of 151 such cases compared with 50 non-addicts as controls. The explanation is a matter of speculation but may be sought among the following facts. Heroin, which is prepared by the treatment of morphine with acetic acid and in the forms available to addicts often contains an excess of acetic acid, is the drug most commonly used, first by inhalation but eventually, in order to increase the effect, hypodermically or intravenously. Underworld heroin is frequently adulterated with lactose and in addicts using the intravenous route the lactose content of the blood must often be appreciably raised. It is possible that the lactose is excreted in the saliva. Drug addicts lose their appetite for wholesome food and appear to have an increased appetite for refined carbohydrate and sweet foods. The ill-nourished drug addict, like the chronic alcoholic, has a low intake of vitamins, including thiamine, a reduction in the consumption of which produces a rise in the blood lactic and pyruvic acids. It is considered possible that if these acids are excreted into the mouth they could influence the incidence of cervical caries. The secretion of saliva is said to be reduced in drug addicts and certainly most addicts are heavy smokers. Neglect of oral hygiene was common among them.—S. S. HECHT and J. FRIEDMAN (1949) *Oral Surg. Med. Path.*, **2**, 1428.

Heteroplasic Bone Formation in the Cheek.—A woman of 59 years complained of a bony hard swelling, about the size of a hazel nut, on the inner aspect of the cheek at the occlusal level about half an inch behind the corner of the mouth. Radiographs confirmed that the swelling contained bone. The mass was easily shelled out under local anæsthesia. Histologically it consisted of fibro-fatty tissue and contained two separate masses of essentially normal bone. There was evidence of active bone formation and resorption. The marrow was a moderately vascular, œdematous fibrous tissue. It was concluded that, since there is no normal bone in the vicinity, the bone in the swelling arose by metaplasia of connective tissue. It is known that calcific deposits that tend to occur in necrotic tissue sometimes ossify.—J. L. BERNIER and H. W. KROGH (1949) *Journ. Oral Surg.*, **7**, 353.

A Method for Determining the Extent of Polymerisation of Acrylic Resins and its Applications for Dentures.—An investigation was made by a chemical method to find the effect on polymerisation caused by variations in curing temperature, thickness, additional cure (i.e. repair), and impurity of specimens. A *curing temperature* of 100° C. gave a good specimen with a molecular weight of 35,000, which was considerably better than that obtained by curing at 75° C., giving a molecular weight of 5,600. In the former case the flask was placed in water at room temperature and slowly heated to 100° C. in one and a half hours and kept at this temperature for forty-five minutes ; while in the case of the latter, it was placed in a water bath at 75° C. for two and a half hours. Experiments in *thickness* by another worker had proved that different portions of the same specimen which varied in thickness had varying properties. It was confirmed that the thin palatal portion had a lower molecular weight than the thicker sections. By the use of thermocouples suitably placed, it was proved that this was due to the thin portion only reaching a temperature of 79° C. as against the thick section's 112° C. *Impurities* are known to affect the properties of acrylic resins. Recently, for example, it has been proved that when rubber dam is used as a separating medium, the resin absorbs an impurity which causes deterioration of the physical properties of the specimen. This was proved correct in the present series. A molecular weight of 1,400 was recorded for specimens processed against rubber dam and an increase to 30,000 when tinfoil was used.—HAROLD J. CAUL and IRL C. SCHOONOVER (1949) *Jour. Amer. dent. Assoc.*, **39**, 1.

Contribution to the Problem of Allergy to Local Anæsthetics.—A case is reported of a woman aged 22 years who exhibited allergy to novocain used for the extraction of teeth. The symptoms were marked swelling and a vesicular eruption of the skin where the solution had accidentally made contact. Intracutaneous and patch tests using a number of different local anæsthetic solutions were carried out and it was found that she was sensitive to anæsthetics such as novocain and pantocain which are derivatives of para-aminobenzoic acid. On the other hand no sensitivity was exhibited to nupercaine which is not a para-aminobenzoic acid derivative, nor to orthoform which is derived from this substance but is practically insoluble and has a structural formula fundamentally different from that of other para-aminobenzoic acid derivatives. Allergy is restricted to that group of anæsthetics which are derived from para-aminobenzoic acid and the use of nupercaine is recommended for those patients and dental surgeons who are allergic to other local anæsthetics. It is commented that epileptics are said to be intolerant of cocaine and its substitutes.—P. ADER and M. SIMON (1949) *Oral Surg. Med. Path.*, **2**, 1029.

THE HEALTH SERVICE

SCOTTISH TRIBUNAL

THE Secretary of State for Scotland invited the British Dental Association to furnish him with a list of dentists who would be suitable to serve on the Scottish Tribunal. In response to this invitation the Scottish Committee of the Association has nominated the following :—Messrs. W. A. Blyth Clark, A. Cubie, J. Johnston Davidson, H. A. Dykes, C. Hebling, A. P. Husband, M. N. Larkin, G. McLennan, John Murray, John Stewart, W. T. Whent. It is understood that the Secretary of State will select six names from this list to form the panel of dentists to serve on the Tribunal.

PRESCRIBED LIST OF DRUGS

THE Health Acts Committee of the Association are considering whether amendments are needed to the list of drugs which a practitioner may prescribe for his patients in the Health Service. The list appears in the Third Schedule to the National Health Service (General Dental Services) Regulations 1948.

The Committee would be glad to receive any suggestions from members on this matter.

The drugs which a dentist normally uses in his surgery are not included in the list since a dentist may use any drug that he thinks proper.

RETROSPECTIVE PAYMENTS

Members have complained that the claim form for retrospective payments for patients treated under the old National Health Insurance scheme asks for more details than they were originally advised to keep.

The original advice from the Joint Advisory Dental Council was given after consultations with the Ministries and any member in difficulties in completing his form should write to the Executive Officer, British Dental Association, 13, Hill Street, London, W.1, marking the envelope " Retrospective Payments."

POSTAGE ON DENTAL ESTIMATE FORMS

THE Ministry of Health have had their attention drawn to the considerable number of cases in which dental estimate forms are being sent to the Dental Estimates Board insufficiently stamped.

A circular letter (E.C.N.39) is being sent to all dentists undertaking general dental services, this contains the following table showing the correct postage payable for varying number of estimate forms.

Postage	*Weight of Packet*	*Maximum number of D.E. forms in envelope, excluding other enclosures*
2½d.	Not exceeding 2 oz.	6
3d.	Exceeding 2 oz. but not exceeding 4 oz.	12
3½d.	Exceeding 4 oz. but not exceeding 6 oz.	18
4d.	Exceeding 6 oz. but not exceeding 8 oz.	24
4½d.	Exceeding 8 oz. but not exceeding 10 oz.	30

The circular also emphasises that it is desirable that only standard pre-addressed envelopes should be used for forwarding forms to the Dental Estimates Board.

Dental News

DENTISTRY IN THE WORLD HEALTH ORGANISATION

BY A. E. ROWLETT, D.SC.PHIL., F.D.S. R.C.S.ENG.

Two delegates from the F.D.I. were present by invitation at the World Health Assembly in Rome in June last year. At this meeting Dr. Alexander Krikos, of Athens, submitted a memorandum to the Assembly, drawing attention to the deleterious effects of civilised diet upon the teeth, with statistical details showing the immensely high proportion of children, adolescents and adults suffering from dental disease in Greece.

Later, the meeting of the Journee Dentaires de Paris, in November, afforded an opportunity to visit the Headquarters of the World Health Organisation in Geneva and to meet certain personnel of WHO with a view to establishing a closer contact between WHO and the F.D.I. for the future. There I had interviews with officials in the Sections of Nutrition and Maternal and Child Health and Nursing. I also again met Dr. W. Forrest, Acting Director, Division of Co-ordination of Planning and Liaison and Dr. Hafezi, Medical Liaison Officer.

It was satisfactory to find that the staff of a world health service were in agreement with the appointment of a dental consultant to the staff. I believe few had any idea of the tension that had so long existed between stomatologists and odontologists on the European continent, but appreciated the principles accepted at the Milan Conference.

I was informed that budgetary provision had been made in 1950 for the services of a dental consultant at the Headquarters of WHO. After a thorough discussion upon what the function of a dental consultant should be, it was decided that, inasmuch as it was desirable to make a start in January 1950, a temporary appointment should be made for a short period, which could be extended into a permanent post if warranted. The qualifications were slightly amended from those agreed upon in Paris and were as follows:

> " The dental consultant selected would have, in addition to a dental degree or diploma, either a diploma in public health dentistry or comparable experience and training, together with four or five years public dental health experience, which would include a certain amount of administration. A permanent dental consultant would be required to possess a working knowledge of one other language in addition to his own. A medical qualification would not be obligatory."

Remuneration : $600 per month tax free, travelling expenses and a subsistence allowance of $10 per diem when travelling.

The week chosen for the visit was one of the busiest in the year, as the Budget had to be finished by the end of the week. However, Dr. Martha M. Eliot, Assistant Director-General, who has taken Dr. Goodman's place, very kindly made time to see me on November 29. Dr. Eliot, who has specialised in maternal and child health, has been Professor of Pædiatrics at Yale University, and a member of the Directing Committee of the National Health Council of the United States. Dr. Eliot approved of the proposed arrangement for a temporary dental consultant and indicated that she proposed interviewing possible candidates when she visited the United States the following week.

The staff of WHO already includes a Finnish lady, Miss Matjkeinson who holds a qualification in Health Education, and it is understood that she would be available to co-operate in Public Dental Health Education.

DENTAL LITERATURE

Microfilm Copies of Papers

ARRANGEMENTS have been made with the Central Medical Library Bureau of the Royal Society of Medicine for microfilm copies or paper enlargements from microfilms of published articles to be supplied to members of the dental profession who make application through the Dental Postgraduate Bureau. The charges for microfilm copies are 4s. for first 20 pages, or less, from one article ; 2s. for each additional 10 pages, or less, from the same article. For paper enlargements the charges are 6d. a page for postcard size (where this is suitable) and 1s. a page for 10 in. by 8 in. with a minimum of 5s. in each case. Applications giving author's name, title of article, volume and year, title of journal, page or pages, should be sent to the Director of the Dental Postgraduate Bureau, 44, Hallam Street, London, W.1.

CONFERENCE ON PERIODONTOLOGY AND ORAL PATHOLOGY

TUFTS College Dental School Postgraduate Division will conduct an advanced conference in Periodontology and Oral Pathology under the direction of Dr. Irving Glickman and staff, at Eastover, a resort hotel in Lenox, Massachusetts, June 13 to 17, 1950. The conference will consist of four days of lectures, seminars, and panel discussions regarding clinical problems. These are to be given by a number of well-known teachers and clinicians in dentistry, medicine, and their related fields. Full particulars of the conference can be obtained from Professor Glickman, Tufts College Dental School, 136, Harrison Avenue, Boston 11, Massachusetts.

IRISH DENTAL ASSOCIATION

Mr. Victor Connolly, L.D.S.I., of Monkstown, Dublin, was installed as President of the Irish Dental Association at the recent annual meeting of the Association in Dublin.

COLOUR FILM OF ACRYLIC RESINS

The Associated Dental Technicians' Section of the Society of Goldsmiths, Jewellers and Kindred Society has arranged a colour film display on Acrylic Resins in Dentistry at the Eastman Dental Clinic, Gray's Inn Road, W.C.1, on Wednesday, January 25, at 7.30 p.m. Admission to the display is by ticket, to be obtained from Mr. W. A. Warrington, 311, Gray's Inn Road, London, W.C.1.

RESTORATION TO THE REGISTER

The name of Albert Barrett, of 17, Plumbe Street, Burnley, has been restored to the Dentists Register.

The Schools

Royal Dental Hospital of London, School of Dental Surgery.—R. B. Lucas, M.D., M.R.C.P., has been appointed to the University of London Readership in Pathology at the Royal Dental Hospital.

Proposed School at Aberdeen.—The Dental Committee of the Aberdeen Executive Council have reported to the Council supporting the proposal to make representations for the establishment of a dental school in Aberdeen. In their report the Committee put forward four main points :—The school should not be operated until the authorities were prepared to erect a new building of adequate size and with modern equipment. The school should be built at Forester Hill in the vicinity of the medical school. The controlling body should be Aberdeen University. An adequate nucleus of full-time teaching staff should be appointed from the opening of the school. Mr. H. M. Crombie, chairman of the Dental Committee, estimated that a properly planned dental school would cost between £750,000 and £1,000,000.

Examination Results

University of Birmingham.—*Final L.D.S.*—Marguerite Armitage, C. J. Crocker, Alison M. Grant, J. R. Grundy (Distinction), J. S. Johnson, Edith Kettle (Mrs.), J. R. Morre, F. T. Troop.

The Services

KING EDWARD VII's HOSPITAL FOR OFFICERS

A CORRESPONDENT who has recently, of necessity, spent a few weeks in the King Edward VII's Hospital for Officers, writes to say that he thinks it should be more widely known that the facilities of the Hospital are open not only for serving officers but also for ex-officers. He adds " as I have been on the staff of a hospital for many years, I can surely say that the King Edward VII's Hospital must be one of the best in London, with fees approximately half of those usually charged in such a high-class nursing home."

Obituary

Ernest Rogers Bull, L.D.S.Eng., of Northampton, died on January 7, 1950, after a short illness in his 83rd year. He qualified from the Royal Dental Hospital in 1890 and joined the B.D.A. in 1906. He had only recently retired from being honorary dental surgeon to the Northampton General Hospital, an appointment he held for many years.

Birth

PINK.—On December 6, 1949, at the Mornington Nursing Home, Bradford, to Joy, wife of S. C. J. Pink, a son (Richard Stanley John), a brother for Cheryl.

Marriages

ALLSOPP—COOPER.—On December 24, 1949, at Ipoh, Malaya, Dr. Philip A. Allsopp of Northwood, Middlesex, to Mary H. Cooper, L.D.S.St.And., of Arbroath, Scotland.

CREASE—TAIT.—On December 23, 1949, at St. Mildred's, Tenterden, John Antony Crease, B.D.S., L.D.S. R.C.S.Eng., elder son of Mr. and Mrs. Sidney H. Crease of 40, Northampton Road, Croydon, to Heather Elizabeth Sutton Tait, L.D.S. R.C.S. Eng., youngest daughter of Mr. Ernest Sutton Tait, L.D.S. R.C.S.Eng., and Mrs. Tait of Tenterden, Kent.

Our Diary

Saturday, January 21.

West Lancashire, West Cheshire and North Wales Branch.—Grosvenor Hotel, Chester, 2.30 p.m. "Orthodontics and Children's Dentistry—some Common Ground," G. E. M. Hallett. Informal lunch 1 p.m.

Monday, January 23.

The Royal Society of Medicine—Odontological Section.—1, Wimpole Street, London, W.1, 5.30 p.m. " Oral Pathology in Children," Professor J. Boyes.

Tuesday, January 24.

Croydon and District Section.—Y.W.C.A., Lansdown Road, Croydon, 8.15 p.m. "Some Aspects of Periodontology," P. A. Trotter.

Preston, Leyland and Chorley Section.—Starkie House, Starkie Street, Preston, 7 p.m. " Provident Societies, Sickness and Accident Insurance," P. E. Grundy.

Thursday, January 26.

Central Counties Branch.—Midland Hotel, New Street, Birmingham, 7 p.m., preceded by Council Meeting, 6 p.m. " Quo Vadimus ? or Whither Are We Going ? " Professor E. Matthews.

Guildford and District Section.—Cotteridge Hotel, Guildford Road, Woking, 8 p.m. "Casual Communications."

Friday, January 27.

Society of Medical Officers of Health—Metropolitan and Home Counties Dental Sub Group.—Hastings Hall, Tavistock House, W.C.1, 7.30 p.m. "The Principles and Practice of Whitleyism and its Application to P.D.O.s," K. C. B. Webster. Visitors welcome.

West Kent and District Section.—Wrotham Park Club, 8.15 p.m., preceded by Informal Dinner, 7.30 p.m. Discussion on Pulpless Teeth. Openers: Professor W. E. Herbert and C. B. de Vere Green.

Saturday, January 28.

Representative Board.—Great Hall, B.M.A. House, Tavistock Square, London, W.C.1, 10 a.m.

P.D.O. Group—Yorkshire Division.—Y.M.C.A., Albion Street, Leeds 1, 3 p.m. Speaker : T. R. Francis, Speech Therapist.

Tuesday, January 31.

Coventry and District Section.—Abbey Hotel, Kenilworth, 8 p.m., preceded by dinner at 7 p.m. "Table Talk on Extra Oral Radiography,"—with films—Surgeon Capt. H. M. Meek.

Metropolitan Branch.—Eastman Dental Clinic, Gray's Inn Road, W.C.1, 7.30 p.m.; " The Antrum as it affects the Dentist," R. Sutton Taylor.

Thursday, February 2.

Bournemouth and District Section.—Grand Hotel, Fir Vale Road, Bournemouth, 8 p.m., preceded by Informal Dinner, 6.30 for 7 p.m. "Anæsthesia in Dental Surgery," Dr. Hugh Franklin. Medical Practitioners welcomed.

Public Dental Officers' Group—North Western Division.—Town Hall Annexe, Manchester, 2.30 p.m.; " Résumé of Mechanical Therapy in Orthodontics," N. Wild.

The Birmingham Medical Institute—Section of Odontology.—154, Gt. Charles Street, Birmingham. "Therapeutics in Dentistry," H. T. Roper-Hall.

Thursday, February 9.

University College Hospital Dental Society.—Medical School, University Street, London, W.C.1, 7.30 p.m. "Fractures of the Jaw," A. B. MacGregor.

Monday, February 13.

The British Society for the Study of Orthodontics.—Manson House, 26, Portland Place, W.1, 7.30 p.m. " Ætiological Approach to Orthodontic Diagnosis," J. H. Hovell. Short Communications by Miss K. Smyth and W. J. Tulley.

The British Society of Periodontology.—The Medical School, Guy's Hospital, London Bridge, S.E.1, 5 p.m. "Oral Hygiene," G. H. Leatherman.

Tuesday, February 14.

Bristol and District Section.—Dental Hospital, Bristol, 7.30 p.m. "A Symposium on Pain," R. F. Barbour, L. E. Claremont, A. Wilkins.

BRITISH DENTAL JOURNAL

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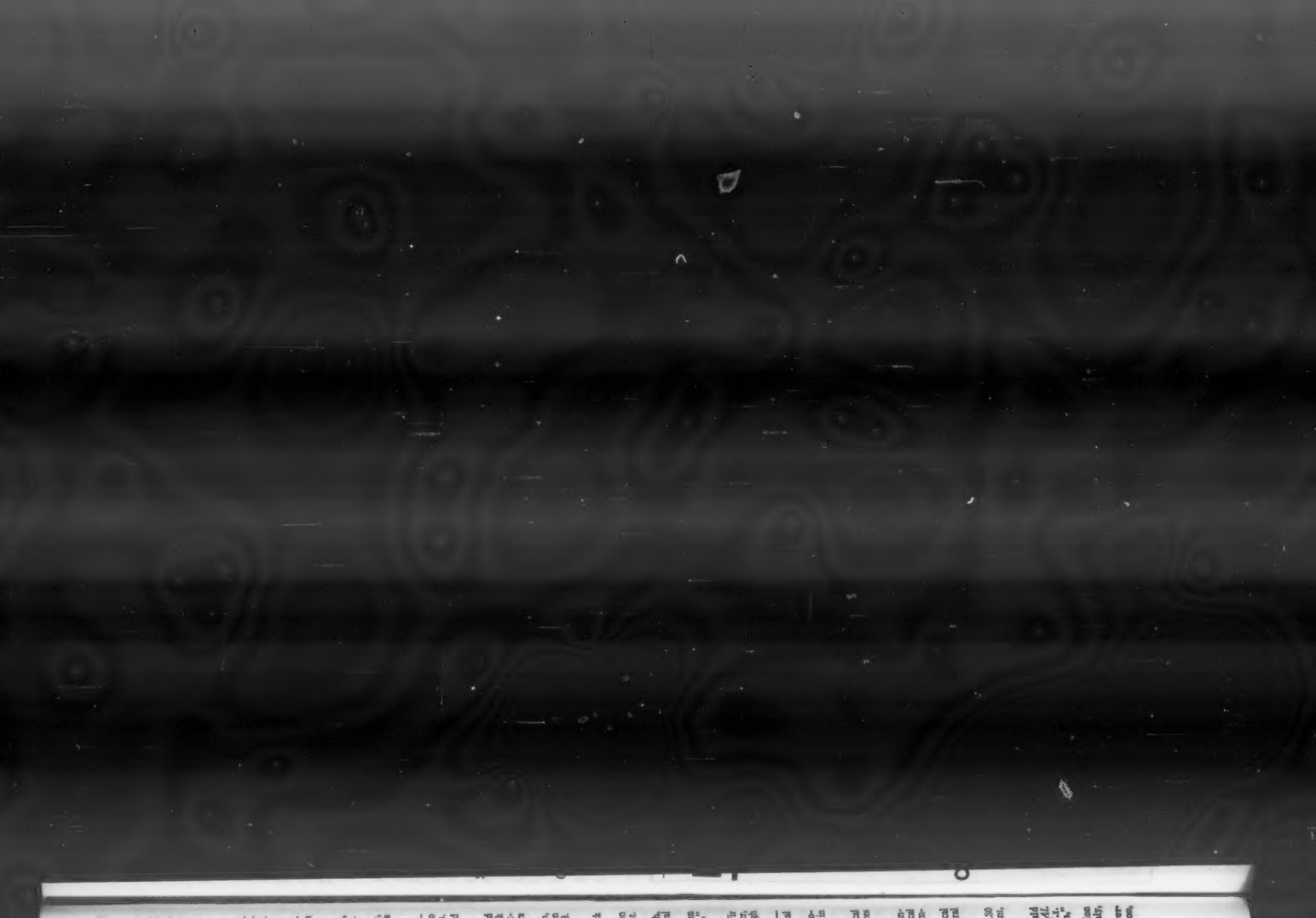
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